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THE ANATOMICAL PLAGIARIST.[1]

By K. F. RUSSELL, M.S. (Melb.), F.R.A.C.S.,
Melbourne.

PRIOR to the passing of the *Copyright Act* of 1710, an author had but little legal right over his own writings. It is true that the registration of a book with the Stationers' Company and earlier Acts had given some measure of protection to the printer and publisher, but the writer was almost wholly forgotten. The Act of 1710 gave the author a copyright for the period of 21 years. Naturally, therefore, literary piracy flourished before this date, and if anyone had the misfortune to write a popular book he could be assured that others would use his work quite shamelessly; even his publisher could be quite certain that other printers would produce unauthorized editions. There was little the original author could do to prevent these practices, except to vent his anger in pamphlets and polemics, many of which are highly diverting and some have become classics. Plagiarism mainly affected the authors of novels and plays, but the sciences were not neglected by any means; some particularly barefaced examples concerned anatomists, and these form the subject of this paper.

In April, 1538, Andreas Vesalius presented to the world a new concept of anatomical illustration in his *"Tabulæ Sex"*, printed in Venice. For the first time there was reality in the drawings of his skeletons, even though there were some errors in their anatomy. These skeletal figures were the best of the series, for the others show adherence to the teaching of Galen. As they were so startling and refreshing, it was not long before they were copied by others. In June, 1539, Jobst de Necker, a woodcutter and printer of Augsburg, issued an exact copy of the Vesalian plates, with the captions and title in German, and an explanatory letter in which he mentions that the plates were produced by Vesalius, but that he was publishing this German issue for those surgeons in Germany who did not understand Latin. His industry was rewarded, for another edition was printed in 1540. Rather naturally, he did not seek the approval of Vesalius for either issue.

Walter Hermann Ryff in his *"Omnium Humani Corporis Partium Descriptio"* (Strassburg, 1541) crudely copied in reverse the skeletal plates from the *"Tabulæ Sex"*, and also the plate of the veins, which he had the wit to superimpose on the seated figure of a woman to make the copy look less obvious. No acknowledgement was made to Vesalius, and Ryff re-used the plates in other books of his published in Paris in 1543 and 1545.

[1] Presidential address, delivered at a meeting of the Section of History of Medicine, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

The *"Tabulæ Sex"* undoubtedly served as models for many other illustrations in books of the period, and they can be traced in Dryander's edition of Mondino (1541), as well as in Charles Estienne's *"De Dissectione Partium Corporis Humani"* (Paris, 1545).

When, in 1543, Vesalius produced his wonderful *"De Humani Corporis Fabrica"*, he had written a book which was to delight his anatomical friends, confound his critics and be a godsend to the plagiarists. There is no question that, with this book, Vesalius reformed descriptive anatomy and gave it modern shape, for no other work before or since has made such an impact on biology. For the first time the structure of man was shown in adequate, well-drawn illustrations accompanied by an authoritative text. It is true that Leonardo da Vinci had preceded Vesalius in the correct delineation of the fabric of the body, but unfortunately his work was to remain hidden in manuscript until the late eighteenth century.

Vesalius's new illustrations were greeted with open arms by the plagiarist, and generations of authors used the plates with and without acknowledgement, in many cases probably not knowing their original source, for with frequent copying alteration was bound to occur.

Many of the Vesalian plates of the *"Fabrica"* appeared in a book published in London in 1545 under the title *"Compendiosa Totius Anatomie Delineatio"*. This was published by Thomas Geminus, a London engraver and printer, who engraved the original woodcuts on copper plates. They were the first copper plate engravings to appear in a book printed in London, and there is no doubt the whole production was a handsome affair; but Vesalius gets only casual mention in the dedication to Henry VIII and at the beginning of the first chapter. Geminus's issue of the plates sold well, for he had the text translated into English for the 1553 and 1559 editions. Later he entered into an agreement with Jacques Grévin of Paris, who published editions of the Geminus text and plates in both Latin and French in Paris in 1564 and 1565. By this unauthorized use of his plates, the illustrations of Vesalius became well known in England and must have produced a steady income for Geminus.

No attempt will be made to discuss in detail the many other authors who used the plates of Vesalius either consciously or unconsciously, for these were legion and included Caspar Bartholin, Caspar Bauhin, John Bannister, Giulio Casserius, Helkiah Crooke, Isbrand de Diemerbroeck, Jacques Guillemeau, Alexander Read, Peter Paaw, Ambroise Paré and Adrian Spigelius.

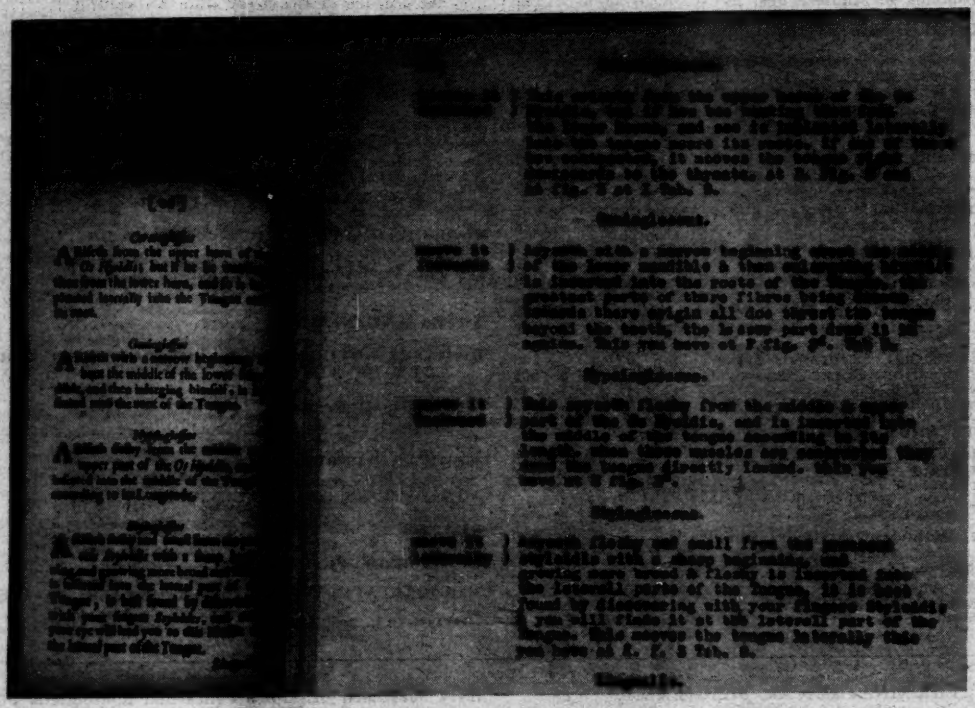

FIGURE I.

On the left is a page of William Molins's "MYΣKOTOMIA: or the Anatomical Administration of all the Muscles", London, 1648. On the right is the typescript of a page of John Browne's manuscript entitled "Myorosia or the Anatomicall Discourse of all the Muscles", 1675, now in the library of the Royal College of Surgeons, London. It will be noted that Browne's description of the muscles is almost identical with Molins's. The manuscript is a draft for Browne's printed version published in 1681 with the title "A Compleat Treatise of the Muscles".

Our next plagiarism concerns a very notable English surgeon-anatomist, who was Master of the Barber-Surgeons' Company on a number of occasions and Serjeant Surgeon to Henry VIII, Edward VI, Mary and Elizabeth. In 1548 Thomas Vicary published a small anatomical text, no copy of which has survived. Vicary died in 1561, and a second edition of his work was issued by his fellow surgeons of St. Bartholomew's Hospital in 1577, with the title "A Profitable Treatise of the Anatomie of Man's Body". When this book appeared, the anatomy which it contained was already many years out of date, it used archaic nomenclature and bore no indication of the now well-established Vesalian teaching. This is not surprising, for Vicary's text was based on, and partly copied from, a translation into English of the text of Henri de Mondeville written by an unknown English surgeon in 1392. A late fourteenth century copy of this manuscript is now in the Wellcome Historical Medical Library, and it was its former owner, Dr. J. F. Payne, who drew attention to the undoubted very

close relationship between Vicary and de Mondeville. Modern comparison of the two confirms Payne's charges of plagiarism; but in fairness to Vicary, it must be pointed out that he had nothing to do with the issue of the 1577 edition, it being printed 16 years after his death. As no copy of the 1548 edition is extant, we cannot compare this with the manuscript. Vicary's text was still being printed as late as 1651, having gone through 10 editions—and this in spite of the fact that it was already archaic in 1577! I am afraid that this popularity does not speak well for the state of anatomical teaching in London in the latter years of the sixteenth century.

In 1681 John Browne, Surgeon in Ordinary to Charles II, published a very pretentious and well-illustrated book on the muscles of the body, which earned the praise of some of his contemporaries, whose encomiums are featured in the front of the book. When examined closely, however, this production proves to be one of the most impudent plagiarisms in medical history. Browne borrowed his text word for word from William Molins's "MYΣKOTOMIA: or the Anatomical Administration of all the Muscles", first printed in 1648, with later editions of 1676 and 1680. His plates were copied from Casserius's "*Tabulæ Anatomicæ*", probably the Frankfurt (1632) edition; but he got his artist to alter the pose and backgrounds of the figures. Unfortunately for Browne, his original manuscript is now in the Royal College of Surgeons of England and clearly shows his methods of wholesale plagiarism, for his plates were altered for the printed version. He even had the effrontery to ask Charles II to give him a Royal Warrant of Copyright, which prevented anyone else from copying the plates he himself had pirated. His book was widely read, for it was translated into Latin and German and went through 10 editions in all. Only one man had the courage to tell Browne what he thought of his book and disclose his piracy. This was a very outspoken surgeon called James Young, who published his broadside in 1685 with the title "*Medicaster Medicatus*, or a Remedy for the Itch of Scribling . . . for the Cure of John Browne". This is a most trenchant and blistering review of all Browne's writings, and clearly points out his plagiarism. It makes most delightful reading, and I must confess I should like to have met Young. Browne made no public reply to this outspoken criticism; but in all the editions of his book printed after 1685 he was careful to alter the wording of his text so that it was no longer word for word from Molins. Ironically enough, Molins's nephew served on the surgical staff of St. Thomas's Hospital at the same time as Browne—indeed, they were friends.

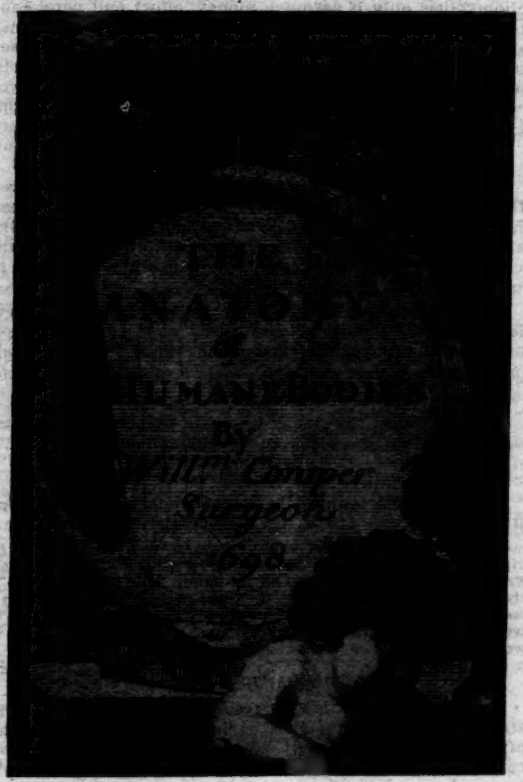

FIGURE II.

A detail of the engraved title of William Cowper's "Anatomy of Humane Bodies", London, 1698, showing the small cartouche with his title.

The actual copper plates from which the illustrations were printed were costly to produce and had considerable commercial value, and there are many references to the sale of copyright together with the copper plates from one printer to another. When a printer died, it was quite common for another printer to buy up the copper plates remaining in the estate, with a possible view to another issue of the book or to the use of the plates to illustrate the work of another author. A good example of this is the purchase by Samuel Smith and Benjamin Walford of the copper plates used by Jordaan Luchtmans of Leyden for the figures of Stephen Blancard's "*Anatomia Reformata*" (1688). Smith and Walford hoped to get Clopton Havers

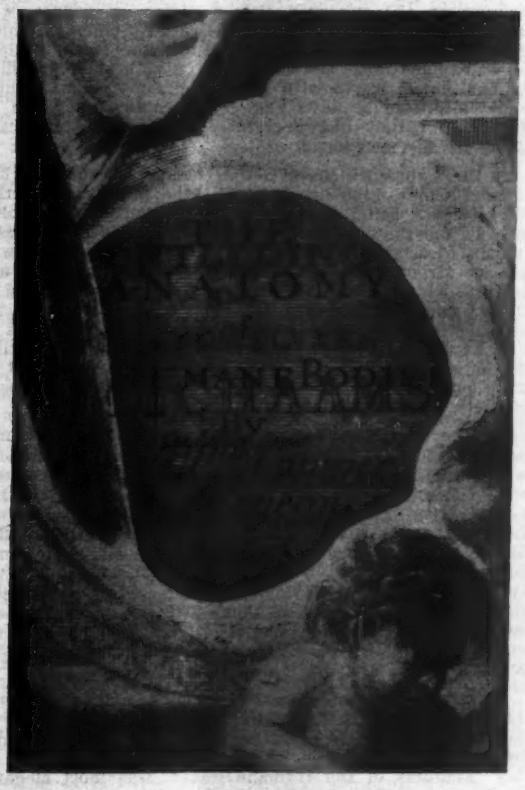

FIGURE III.

When this cartouche is examined by transmitted light, it is seen that the English title is printed on an irregularly shaped piece of paper, which is pasted over the original Dutch wording, "*Ontleding des Menschelyken Lichaams Gedaan door Govard Bidloo Anat. et Chirurg. Profess*". Cowper used not only the Dutch pulls of Bidloo's plates, but also the engraved title.

to write a text round these plates, but he died before this was done. In 1707 these copper plates were used to add to the illustrations in James Drake's *"Anthropologia Nova,* or a New System of Anatomy". The history of the plates was given by Drake in the preface to his book, so what may appear to be a piracy was in fact a good piece of printing business.

Another method used by a printer to obtain plates for a book he was publishing was to buy the printed pulls from another printer and insert them in his book. The most notable example of this method in anatomical literature was the use by William Cowper of Godfrey Bidloo's plates; but Cowper made the cardinal mistake of using them while Bidloo was still alive.

In 1685, Godfrey Bidloo published in Amsterdam a notable atlas of 105 anatomical plates magnificently drawn by Lairesse. Samuel Smith and Benjamin Walford obtained 300 sets of the plates of the 1690 edition from the Dutch printer, and issued them with an English text by William Cowper in 1698. Cowper's text was quite different from Bidloo's, and indeed was much more accurate; but this does not absolve him from a particularly daring plagiarism, for he even pasted his own title and name over the Dutch wording on the engraved title. Bidloo, of course, was furious and attacked Cowper in a scathing polemic, which resulted in Cowper's appearance before the Royal Society for an explanation. The exchanges on both sides provided the anatomical world with gossip for some years. Smith and Walford must have had considerable connexions in Holland, for they had previously obtained the Blancard plates already mentioned.

By the eighteenth century, the teaching of anatomy had advanced to a high level in England, and much active research was being done. There was therefore less need to rely on the thoughts of others, and a considerable amount of original work was being published. There was, too, an air of caution on the parts of both printers and authors, which tended to prevent them from indulging in blatant plagiarism. This was assisted by talk of the introduction of laws to protect the interest of authors as well as publishers. The net result of this was a decline in the obvious forms of piracy and the development of more subtle methods, best seen in the unauthorized issues of books published anonymously.

In the anatomical field, the popular, well-attended teacher was always likely to have his lectures published without his authority, and Alexander Monro (*Primus*) was victimized in this way. In 1744 his "Essay on Comparative Anatomy" was published anonymously in London entirely without Monro's knowledge or permission. Monro's lectures were always popular, and manuscript copies had a wide circulation amongst students. One enterprising student obviously saw financial opportunities in having a transcript of them printed. This and subsequent editions, in 1775 and 1782, of the pirated issue circulated widely in London and Edinburgh, but the Monros, father and son, did not make any protest.

Strangely enough, it was not until 1783 that Monro (*Secundus*) published the first authorized edition of his father's work on comparative anatomy. The popularity of Monro (*Primus*) is well shown in another way, for his "Anatomy of the Humane Bones" was most elegantly produced in a French edition by Jean Joseph Sue (*Primus*) in 1759, and his "Treatise on Comparative Anatomy" was translated into French by Jean Joseph Sue (*Secundus*) in 1786. The translation of an English author's work into French was not, of course, unusual, nor was the fact that, in this case, Monro's permission was not obtained; it is, however, somewhat uncommon for a father and a son each to translate different works of the same author.

In the nineteenth and twentieth centuries it became necessary for anatomical workers to develop a wider knowledge of the literature of their speciality, and then it became much harder for the plagiarist to remain undetected. This, coupled with the legal backing of the *Copyright Act,* enabled authors to protect their own writings—now they could hope to obtain legal redress from a plagiarist.

THE PROBLEMS OF ADOLESCENCE.[1]

By W. A. DIBDEN,
Executive Chairman, South Australian Association for Mental Health.

JUVENILE DELINQUENCY is in the nature of an endemic disease. Its incidence varies from year to year. With an increasing population this social problem will grow unless more effective action is taken to provide money and facilities for research, treatment and education in community responsibility. The South Australian Association for Mental Health believes that social problems should receive as much help and encouragement as medical ones. Juvenile delinquency will be checked in the same way as poliomyelitis only if as much money, effort and persistence in research are applied to it. The Association would like to see as immediate a public demand and government response as was evident in the recent epidemic of "Asian 'flu", when, in this State alone, approximately £6320 were spent on vaccine, and the demand far exceeded the supply of 14,462 doses of vaccine available for distribution.

Medical Aspects of the Problems of Adolescence.

In considering the problems of adolescence, the bias is often towards those problems which most disturb the community, such as delinquency. It is my intention to follow this bias, but to show where possible how far the mental health of the adolescent is involved in other disorders not purely physical in origin.[2]

With delinquency as our example, problems can be considered under three headings: cases with a physical basis, those with a psychotic basis, and those with a psychological basis.[3]

Cases with a Physical Basis.

In these cases the brain tissue is defective or diseased in some way. Two main subgroups can be considered.

Organic Disease.

Examples of organic disease are encephalitis, epilepsy, brain injury and endocrine disorders.

CASE I.—A well-to-do young woman was looking at furs in a wholesale house. While trying on a fur coat she suddenly walked out of the shop. The manager followed her into the street, where he found her in a confused state. She had no recollection of her previous actions. This young person was treated for minor epileptic seizures. Fortunately she was well known at the warehouse.

Mental Deficiency.

Mental deficiency is the result of a lack of brain substance from birth due to a variety of causes. The degree of mental deficiency may be obvious, as with the severe cases in patients classified as idiots and imbeciles. The lesser degrees, in the feeble-minded and dull individuals, are not so readily recognized, and may be accurately diagnosed only by special psychometric tests.

Behaviour Disorders with a Physical Basis.

An interesting group of cases with a physical basis, presenting with behaviour disorders, comprises children who show a non-specific cerebral dysrhythmia in the electroencephalogram, often located predominantly in the temporal lobes. The behaviour pattern has certain characteristics which should make the physician suspicious. The disorder tends to be episodic. Periods of fairly normal behaviour are irregularly interspersed with periods of impulsive, aggressive, purposelessly destructive, antisocial

[1] Part of a symposium on "The Problems of Adolescence", presented at a combined meeting of the South Australian Branch of the British Medical Association and the South Australian Association for Mental Health held on February 27, 1958.

[2] Sufficient examples in the adolescent age group, in my personal experience, were not available. I consider, however, that the cases in other age groups represent conditions seen in adolescence and are therefore applicable to the discussion.

[3] Classification adapted from that compiled by the Tavistock Clinic on "Types of Delinquency" in *The Magistrate,* July, 1938.

behaviour. Outbursts may occur literally out of the blue or be precipitated by events which are quite trivial and which, in the period of more normal behaviour, would produce little or no reaction. If a cerebral dysrhythmia is demonstrated by electroencephalographic examination, the patients often show dramatic improvement on "Benzedrine" therapy, though concurrent psychotherapy is advisable.

CASE II.—A boy, aged 11 years, was referred because he was considered to be a "pre-delinquent". The complaints were that he stole and lied, was destructive and aggressive towards younger children, and was uncontrollable at home and at school. He was an adopted child, and his mother described an episodic behaviour pattern. At times he was affectionate and fairly easy to manage. At other times he acted as if he was "demon possessed". Psychometric tests showed he was of dull normal intelligence. The electroencephalographic examination revealed bursts of epileptic activity. His behaviour improved with anti-convulsants, group psychotherapy and transfer, first to an opportunity class, and second, when he was 12 years old, to a special boys' class.

This case illustrates well the need for a community approach to these problems. Diagnosis and treatment are possible only by the combined efforts of the psychiatrist, psychologist, neurologist and education authorities.

CASE III.—A boy, aged nine years, was subject to attacks of abdominal pain and vomiting, which came on quite suddenly and without warning. They occurred while he was walking in the street or sitting in a cinema. His mother said that the vomiting usually occurred first, and then he would "scream with the pain in his stomach". An attack might last from 10 minutes to 12 hours. He had had five attacks in the six weeks prior to the first consultation. He was described as "terribly excitable" and overactive. At school he was not doing well, and the teacher complained he did not concentrate and seemed often "in a world of his own". Vomiting had occurred first when he was 10 months old. The excitability was noticed about the age of three. At six years of age he was admitted to hospital for investigation of his physical symptoms, but no organic cause could be found. He was the elder of two boys. The father suffered from a "nervous stomach"; the mother was tense and nervy and prone to attacks of migraine. The impression gained was that the parents were rather repressive and expected perfection in their children. Psychometric tests showed average intelligence but great variation in sub-test scores. An electroencephalographic examination revealed a cerebral dysrhythmia maximal in both temporal areas. A dramatic improvement in physical health and behaviour occurred as the result of "Benzedrine" therapy. His school work showed an equally marked improvement. Now nearly 11 years of age, he has been on "Benzedrine" for two years. A recent electroencephalogram shows that the cerebral dysrhythmia is still present though perhaps not quite so markedly as before. Abdominal pain and vomiting occur rarely and are usually associated with some emotional upset.

Psychosis.

This group comprises those mental disorders defined in law as insanity or disease of the mind. Two main groups are distinguished.

Manic-Depressive Psychosis.

The problem of behaviour may occur either in the melancholic (depressed) or in the manic (elated and excited) phase. This disease may underlie attempts at suicide or the infliction of injury on near relatives under the influence of delusions.

CASE IV.—A 15 years old girl began to act strangely at one of our high schools. She became very excitable, talkative and restless. Previously she had been quiet, reserved and inconspicuous in class. Her concentration, memory for schoolwork and judgement became impaired. She would rush in and out of classrooms and engage any teacher in rapid inconsequential talk. She would do balancing feats and ballet steps on seats in the grounds. At home she was garrulous, excitable, irritable and overactive. She slept poorly and was losing weight. She was diagnosed as suffering from hypomania, and responded rapidly to treatment by chlorpromazine and reserpine. At the age of 18 years she suffered a less severe attack which caused her to lose her job.

Schizophrenia.

In paranoid states the patient, acting under the influence of persecutory delusions, may attempt injury on those whom he believes hostile to him. The disorder may cause the patient to commit apparently unmotivated crimes. The illness may be unsuspected until such an act is committed.

Cases with a Psychological Basis.

Trivial Delinquency.

This group includes simple aberrations of conduct, often merely lapses in persons without mental abnormality. Boys who steal apples or climb into warehouses or over dock gates may do so from a healthy sense of adventure.

Simple Delinquency.

Antisocial behaviour may result from a bad home environment and lack of discipline, so that the moral standards are not those of society in general. Disciplinary and educative measures often prove curative.

Reaction Character Traits.

This is the commonest type of mental abnormality leading to antisocial conduct. The term "reaction trait" means a tendency developed in the mind in order to cover or mask an opposite tendency. Thus a dependent, weak boy may wish to show off his courage and manliness, or a child deprived of affection may repress this need by assuming a rebellious, "don't care" attitude of grievance against a harsh world. In this way he over-compensates for the feelings which he represses. Moral sense is present, but it is on the side of the rebellion, and the individual may be proud to be a public enemy.

These reactions are usually formed in early childhood, so that the patient has no idea why he should be so affected. Such conditions constitute a definite psychological disorder and are probably the most recalcitrant and persistent of all types of delinquency.

Psychoneurotic Delinquency.

People whose acts fall within this group have a strong moral sense, with which their antisocial conduct is entirely out of keeping. In contradistinction to those who show reaction character traits, they are genuinely ashamed of the tendencies which from time to time overwhelm their better judgement. These conditions also result from emotional difficulties in childhood, but this group differs again from the preceding one in that the delinquent impulse is normally kept out of mind, but reappears at times of emotional stress. The act satisfies some unrecognized childhood need appearing in disguised form. It is in this group that psychological treatment is most applicable.

CASE V.—A college boy, just 16 years of age, from a well respected family, was apprehended because he was seen exposing himself to small girls. He had an excellent school record and had never previously been in trouble. A reserved, studious boy who did not make friends easily, he nevertheless had taken an active part in school affairs. The offending acts took place while the father was overseas for six months on a business trip. Being the eldest of the family, he had willingly assumed added responsibilities while his father was away. Psychometric testing showed he was of superior intelligence. The psychiatric history revealed that his relationship with his father had never been a close one. His mother thought he was afraid of his father. The latter, too, because of business, civic and other interests, had his time so fully occupied that he had withdrawn considerably from home affairs. The boy's aberrant sexual behaviour made his father, an intelligent man, fully aware of where he had failed his son. He gave up some of his activities and took steps to improve his relationships with the lad. There was no recurrence of the aberrant behaviour.

Most of the problem of adolescence can be considered under similar headings. For example, learning difficulties, truancy or refusal to attend school, poor work and social adjustments, disturbances of sleep and appetite are symptoms of some underlying disorder, the differential diagnosis of which can be determined only by a consideration of the heredity, development and environment of the individual patient along the lines indicated in this classification. Physical symptoms for which no organic cause can be found, such as headache, abdominal pain, vague ill health

and pains in the limbs often have a psychological causation. The reason for the apparently physical symptoms may be found in one or several of the above-mentioned categories.

I should like to make one additional point. Pathological conditions are readily accepted as a basis for disorder. Biological states that are essentially normal are less well recognized as a source of mental upset. Puberty and adolescence are periods of great variation in biological development. The normal range is very wide. The acquisition of secondary sex characteristics and the associated growth increase do not occur at a precise age. So we find the big mature girl of 11 or 12 years standing out prominently from her less mature friends. A boy of 13 may shave and have the physical stamp of an adult. Or conversely, the 15 or 16 year old boy or girl may be conspicuous for a marked delay in physical maturation. Such extreme variations in the normal curve may produce psychological and social stresses in an individual, which may not be recognized and which may lead to disorders of behaviour or health.

CASE VI.—A youth, aged 16 years, was referred for psychiatric assessment because of petty larceny. He was six feet two inches in height and weighed nearly 15 stone. He looked and thought as an adult. He smoked and drank in the hotel with his friends, who were all adults. His pay was based on his chronological age and proved quite inadequate for his social needs. Petty thieving arose out of the temptation to supplement his earnings.

It must be emphasized that such extremes of normal may not have any adverse effect. Most problems of adolescence will be found to have a number of ætiological factors.

To summarize, stealing, or any other delinquent act, may represent purely the misdirected, adventurous energies of the adolescent or poor disciplinary training at home. Such patients often show no mental abnormality. It may, however, appear as the poorly judged act of a mental defective, or occur as part of the disturbed mental homœostasis of the youth with epilepsy or a non-specific cerebral dysrhythmia. It may be a manifestation of the severely emotionally disturbed youth with reaction character traits or a psychoneurosis. Finally, such a delinquent act may be the first sign of a frank psychosis with delusions and apparently unmotivated behaviour. In the same way, a physical symptom such as headache or abdominal pain may occur as a pure evasion. Adults are guilty in the same way, as when a headache is used as an excuse for not attending some unwelcome social function. The symptom, however, may be the only indication that a youth of dull intelligence cannot cope with the social stresses of his life; or it may be a manifestation of epilepsy or a cerebral dysrhythmia. Emotionally disturbed individuals with anxiety neurosis, hysteria or obsessive-compulsive states frequently exhibit such physical symptoms. Finally, a complaint of abdominal pain may rest upon a schizophrenic delusion of being poisoned or a melancholic delusion that the sufferer is too unworthy to eat the food placed before him.

The Management of the Problems of Adolescence.

The problems of adolescence extend beyond the field of medicine. Their detection, even their treatment, may be the responsibility of the school-teacher, the priest, the magistrate and the psychologist, as well as the doctor. But it is to the family doctor that the distressed parent frequently turns. It is incumbent upon him to make an accurate diagnosis. As with any disease, early diagnosis renders more certain a successful outcome for therapy. The diagnosis rarely rests on the examination of the child. It is arrived at predominantly from a careful and detailed history obtained from one or both parents. The proper investigation takes time, as does the thorough search for clinical evidence in any illness. Time is necessary for treatment. The problems of adolescence have serious social and medical implications and therefore warrant time being spent on them. The mere prescribing of sedatives or tranquillizers is rarely good therapy.

The management of many of the problems of adolescence — and management is often synonymous with treatment — can be considered at various levels: (*a*) communal, by a parent, teacher, policeman, minister or priest; (*b*) paramedical, by a probation officer, social worker, psychologist; (*c*) medical, by a general practitioner, physician, neurologist, psychiatrist; (*d*) political, by (i) a lawyer, magistrate, judge, or (ii) mental health services.

It will be clear from this classification that if we as a community are to tackle actively the many problems associated with adolescence more education and training will be needed at all levels. More research must be made into basic causes and their correction. For any treatment to be fully effective, adequate facilities are required. These do not exist. There are too few clinics and insufficient trained personnel.

With regard to professional workers, we may ask whether the University of Adelaide is providing enough training for enough people. It has not so far provided a course of training and an examination for the diploma of psychological medicine. The Post-Graduate Committee in Medicine is making some provision in this direction. There could be more training in psychological medicine at the undergraduate level. The University has departments for the training of probation officers, social workers and psychologists.

Community education must be left to such bodies as the Workers' Educational Association and the National Fitness Council, and to voluntary organizations such as the South Australian Association for Mental Health and the Marriage Guidance Council. The Church plays a most important role, and organizations such as the Scouts and Guides can be pressed into service. In the field of sex education, adult education appears more important than merely the giving of talks or showing of films to the pre-pubertal or adolescent child.

The expert committee set up in 1955 by the British Medical Association to report to the United Kingdom Government on homosexuality and prostitution concluded that such social evils would be reduced by proper sex education. It advised, however, that:

> Training in sexual education, properly undertaken, should take its place with training in table manners, fair play, honesty, and all those other elements on which a boy bases his standards of conduct and which enable him to live on terms of respect for himself and the community.

It is clear, therefore, that to give a few talks on sex to teenagers is only a way of presenting a palatable sop to the guilty and responsibility-evading adults of our community.

We may consider whether there is a need for an improved organization of our State health services. There is certainly a need for more child guidance clinics, especially those equipped to deal with adolescents. It has also been suggested that the Mental Health Services should be divorced from the Hospitals Department and that there should be established a Department of Mental Hygiene or Mental Health Services with a director answerable to the Minister of Health. Mental illness, in all its forms, has been called Public Health Problem No. 1 (Stoller, 1955). The problems are so great as to warrant direct access to the ear of the Minister. The clinics at public and subsidized hospitals would retain their autonomy and there would be room for the activities of voluntary organizations such as the South Australian Association for Mental Health. But there is a need to coordinate community activities to prevent overlap, reduplication and waste of money and effort.

Conclusion.

The problems of adolescence arise from hereditary, physical, environmental and psychological factors. Both the individual and his *milieu* must be considered, and these are inseparable. A diagnosis cannot be made effectively without a due consideration of both. In treatment and prevention, the general public, non-medical per-

sonnel and doctors all have a role to play. The mental health of the community is as important as the mental health of the adolescent.

It is the aim of this symposium to illustrate that the whole community has a responsibility and a part to play in dealing with the problems of adolescence.

Reference.

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THE PROBLEMS OF ADOLESCENCE.[1]

By MARY SMITH,
Clinical Psychologist, Child Guidance Clinic, Adelaide Children's Hospital.

EVERY stage of human development has problems of behaviour which are peculiar to it, because of the nature of the human organism and its response to the environment in which it moves; and, as human development is always continuous, we cannot separate the behaviour difficulties of adolescence from the problems associated with physical, emotional and social growth in infancy and childhood. At the moment public opinion and discussion are centred upon poor behaviour from adolescent groups, but it seems to me that mental health in adolescence must depend on the importance accorded to the place of child health—in its widest sense—in any community, and on the recognition of the mental health needs of middle-aged parent groups. We cannot, indeed, separate the problems of adolescence from the problems of infancy, childhood or adult life. Our two previous speakers have outlined the conditions of the adolescent who finds himself, eventually, in the magistrate's court or the psychiatrist's clinic, but I can not help feeling that we are more nearly affected, or plagued, by the vagaries of conduct of the awkward but ordinary adolescent who is in our home, in our class, or on our streets.

Anthropologists, notably Margaret Mead, have pointed out from time to time the differences which exist between the behaviour of adolescents of some primitive tribes and that of teenagers in our own culture. They have emphasized, particularly, the evidence of charming, easy behaviour, relative to the tribal pattern, of young people who are accepted as adults in their group when they have attained puberty and have fulfilled the disciplinary requirements of adult initiation rites. For our adolescents there is none of the assurance of being accepted as adults after biological maturity; though they may have reached physical adulthood, they find that they are regarded as neither children nor grown-ups, and they are unsure of themselves, resentful, and often clumsily aggressive both physically and emotionally. Adults have a tendency to remind the teenager that he is "not yet grown-up" when it suits them to have him childishly dependent, and to exhort him to remember he is "no longer a child" when they are demanding a more mature approach to life from him. Both attitudes can be presented to the one child within an hour: is there any wonder that he is unsure of his standing in his family or in the community with its authority-figures? We need not be surprised when he seeks to detach himself, aggressively, awkwardly and immaturely, from people and groups who seek to hold him in the status of a dependent child. Adolescents themselves are often well aware of the problems of release which their parents face in the process of teenage weaning, but they are not mature enough, nor have they enough experience of living, to tolerate the means by which the family strives to keep the children "young" and dependent. Most families are not conscious of the ways in which children are secured to them long after they might reasonably be supposed to be independent, and all the ensuing angry behaviour of conflict is put down to "normal" adolescent difficulty. The child-family conflict can extend into nearly every field, from the choice of clothes to religious or political belief, and the bitterness of argument is intensified on both sides of any question by parental insistence on acceptance of family choice rather than on personal choice founded on family values and standards of integrity. When parents and parent-substitutes realize that the techniques of detachment are as difficult to acquire as the techniques of release, and that finding adult behaviour levels requires the most subtle assistance rather than opposition, the long period of adolescent resistance will be eased.

The adolescent is constantly seeking advice and reassurance in indirect ways. It is upsetting to his family that he will often discuss the most intimate matters with people who are almost strangers to him, while ignoring the well-meant efforts of family guidance. Young people look for companionship outside their homes, especially from people of their own age groups, but they are also attracted to the adult who is willing to remain outside their emotional involvements and to accept from him or her advice which is almost identical with the rejected guidance of authority. Our homes would possibly be quieter and happier places if our adolescents had the opportunity to discuss and argue in characteristically fiery fashion with equally impatient young people, the topics which bring dissension when they are broached at home. A well-conducted youth club, with an adequately trained professional youth leader, is an adjunct to family living. At the present time, many of our interest-groups are woefully inadequate for adolescent society. Leaders are tired amateur parent-substitutes, in far too many cases, thinking up club activities going home in the tram at night, instead of being well-trained and prepared, mature and sympathetic adults who can give all their time to the interpretation of an adolescent attitude, to the extension of adolescent energies, and to the development of adolescent intelligence and integrity. They are too frequently inclined, and expected, to impose a policy rather than to help formulate a philosophy. And club programmes may have little relation to the current problems of living, and, in being "good" and "respectable", sidestep all the issues which growing boys and girls wish to face for themselves. We have a tendency to think of adolescents as irresponsible and wild beings, but they are desperately trying to find some basic values in living which we are, too often, unable to put before them. Are we, as adults, equipped to give them the help they need in finding a point in living, especially in these years? In the adolescent years of "gloom and tomb", to quote the late Dr. Josephine McAlister Brew, can we discuss dispassionately and comfortingly a philosophy of living and dying?

There is little doubt that we underestimate young people, we do not regard them as being as intelligent as they are, and though we have been reminded tonight of the very dull ones who are almost an irrecoverable group in any community, we must also be reminded that, in the teens, we come to the peak development of intelligence, though not, of course, of experience. In underestimating the adolescent, we seldom give him enough to do and fail to give him responsibility. We behave, when we discipline teenagers, as we behave towards people in prisons—too softly. That does not mean that they are not punished adequately, but there is seldom an occupation in prison that takes up all a man's abilities, and that is why he deteriorates within its walls. Clubs and agencies entertain young people and amuse them, but seldom give youngsters an opportunity to be useful, satisfyingly and thrillingly useful, within their community. The young person in the home, biologically mature, but economically dependent, is denied the opportunity of earning his own way, at least as far as luxuries are concerned, and then, when he does exchange his pocket-money for his pay-packet, he is not required to pay for what he has. There are girls and boys who make no contribution to the family exchequer for their living expenses, who have a relatively large wage to spend on themselves without an idea of the value of money. They forfeit the inestimable feeling of independence which comes from knowing that they are paying

[1] Part of a symposium on "The Problems of Adolescence", presented at a combined meeting of the South Australian Branch of the British Medical Association and the South Australian Association for Mental Health held on February 27, 1958.

their own way in all things and learning comparative costs. An eleven-year-old with a five-shillings-a-week job who pays two-and-sixpence a week "board" is learning the value of independence by contributing something to what is done for him.

Problems are almost the whole of adolescent life; some of them are enjoyably resolved, but most of them need help of a non-directive kind. We understand young people striving to be free from family domination, wanting economic independence without an idea of what it means, seeking answers for quite unanswerable questions, and we probably accept, without being able to verbalize on the matter, that at adolescence our youngsters are physically capable of reproducing their own kind. In more primitive cultures they may use, directly, the functions which have matured, but in our society, direct reproductive behaviour, with full social sanction, is delayed for a number of years. With us, sexual activity at adolescence means promiscuousness with either a sense of guilt or an amoral attitude to the whole affair; either means the beginning of delinquent behaviour or neurosis. What the community must offer is some socially acceptable substitute behaviour for that which is a direct and physically normal course at adolescence. That, in itself, opens a wide field for research. In good homes where parent attitudes are enlightened in matters of sex instruction and children have had no problems in understanding their biological growth, there are sometimes found young people who are troubled over specific aspects of courting behaviour, beyond the bounds of straight-out sex-instruction, and certainly outside the limits of what they may talk over with parents. "One has to respect the privacy of one's parents", said an intelligent eighteen-year-old who had asked, in a club session round the fire, just "how far one should go in petting", and whether one had to accept the habit as an ordinary part of social intercourse, especially as it seemed "such a dreary kind of love-making". The group found its own answers with little prompting from the adult who had no parent ties with any of them.

It would seem that the role of the non-parent adviser is becoming increasingly important in the social activities of youth, and the group which is conceived to help youth develop its own abilities, latent or apparent, physical, intellectual, or emotional, needs to be no longer a haphazard organization or a negative one "designed to prevent juvenile delinquency". There is little need for elaborate material provision, but human material needs careful selection to bring about those relationships which the community needs with the growing adult-child. An English youth club, in the Midlands, in an area bounded by canals, factories and gasometers, gave the youngsters who drifted in and out of its streets a year of interest, amusement, instruction in practical skills and social service, and opened up new worlds of ideas and æsthetic striving for them with a project of a walking tour in France in their summer holidays. Their ages ranged from 15 to 25 years, though National Service claimed the boys between the ages of 18 and 20, and many did not return to adolescent club work after that. A walking tour took paying for, so a treasurer collected and banked weekly subscriptions from those who wished to make the trip. It was he who followed the itinerary as it was built up, and made contact with travel agencies and shipping offices. And a walking tour also meant walking on their own two feet, an uncomfortable business if they were not adequately cared for. So a chiropodist came into the club and showed the youngsters how to wash the feet properly, how to cut one's toe-nails and attend to corns and callouses. To begin, it was all grand fun; they practised on each other's feet with gusto and then, to show off as well as to keep in practice, they went home and "did" mum's poor old feet for her, and looked after dad's toe-nails and corns. Happier feet made work easier and people easier to get on with. And after the care of feet came sessions on wool, its origins and uses, its care and wearing qualities, and instructions on knitting it into socks. Everybody, boys and girls, had to knit, and then they learnt the business of darning and mending so that feet should be comfortable, and learnt to wash woollens correctly. Mothers said that never before had they had so much help with the washing and mending, from their boys as well as from their girls. An economist came to explain why currency restrictions were in force, and from the exchange of shillings for francs came innumerable questions about the disadvantages of "crazy" English reckoning compared with the smooth decimal system of France. The nature of passports and their use needed explaining, but everyone was interested with the incentive of pride in possessing one. At school no one had given a fig for the history of France or for its geography, but here they were, three months before setting out, deep in the intricacies of tradition and politics, of architecture and countryside, of food and drink and shelter in the country "just over the Channel". And after a year's preparation which had been absorbingly interesting because it had a point and purpose, they went to France and had a whackingly good time, quite unaware of the fact that they had been learning useful lessons and applying their knowledge even more usefully. Informal education did more than teach facts: it taught discipline, self-control, patience, kindness, and service in small things. Our adolescent is a serious person and a responsible one, but because he likes nonsense and has little else to occupy him, we fail to take him seriously and subject him to even more tensions than this troubled world normally brings him. If we give him some substitutes for his natural and direct ways of behaving, which we do not allow in our social organization, then he may come more into line with the easy adolescent of the primitive tribe.

THE MENTAL HEALTH OF THE YOUNG DELINQUENT.[1]

By W. A. SCALES,
Magistrate, Juvenile Court, Adelaide.

THERE can surely be few problems which are more urgent and yet more defiant of solution than the problem of delinquency. It stems from less than 1% of the population, yet there are none of us whom it does not reach. The old adage does not say whom it is that crime does not pay, although it is usually taken to mean that crime does not pay the criminal. It would be more accurate, however, to say that crime does not pay the public. If we are not the direct victims of the offender we at least pay for his misdeeds to the extent of well over £1,500,000 each year in South Australia. This is the cost of maintaining our gaols, reformatories, police department, juries and probationary staff, and does not include such incalculable costs as the destruction of property, relief of the prisoner's family or loss of manpower while he is in custody. Nor can one assess in money the suffering of his family or of his victim. Yet all these consequences follow from the actions of that very small minority in our midst.

Most of us pay our taxes — though unwillingly — at least in the belief that they are necessary for State purposes. The police force, we know, has to be maintained from these taxes, and we rely upon its vigilance to preserve us from lawlessness. When our confidence is shaken we blame the laws for being too lenient. Only when we feel in danger do we take stock of the position and appoint committees to determine the causes of the trouble and suggest the cures. During the past 20 years or so there have been numerous such inquiries, and the findings in each case have been so identical that it seems hardly worth while adding to them.

If the conclusions are clear, why, then, is the problem still unsolved? The answer is that the suggested cures can be effective only if the community as a whole responds. There are, of course, some factors, such as mental subnormality and poverty, for which no one can be blamed,

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but these are minor factors today, and usually the story in the juvenile courts is of someone's stupidity or apathy, and I do not mean that that someone is only the young delinquent. Lack of common sense and disinterest are extremely difficult to change, and so we continue to suffer the consequences.

We know we live in a materialistic world; we see in some large cities gang lawlessness on a scale which the democratic laws which we desire seem powerless to restrain; we believe that somehow our problems are related to the conditions under which we live, yet there is still a sufficient number of people who do nothing about applying in their own homes the suggested safeguards.

My remarks must, of course, be limited to the homes of the children who appear in the juvenile court except where you yourselves can detect a pattern of a more general application. Nevertheless, delinquency can be contagious, and although we in South Australia are generally free from the evils I have mentioned, we are a rapidly growing State and should do all in our power to preserve ourselves from the fate of those who are suffering from such evils and who will have to pay for the hard and costly road to recovery.

Where, then, can we most profitably focus our attention? There cannot be any doubt that we should first concentrate on the homes where children are brought up. One could quote at length from the mass of literature on juvenile delinquency, only to repeat the same conclusion in different words. It will be sufficient to refer to the most recent report, namely, that presented in 1956 by the Advisory Committee appointed by the Victorian Government under the chairmanship of Mr. Justice Barry. This report states:

> Anti-social individuals are manufactured in childhood. If any society finds itself manufacturing them in unusually large numbers, the increase is likely to be traceable to factors in the pattern of community life which act adversely to the family or on the customs of up-bringing which parents adopt. Delinquency results from a failure of the individual to adapt himself to the demands of society. The aggressiveness of any individual is said to depend largely on the degree to which he has been frustrated in childhood. "No child is born delinquent" observed the U.S. Senate Committee in Juvenile Delinquency, "but he is subject to a wide variety of influences and conditions which tend either to lessen or increase his chances of becoming delinquent . . . First to the profound influence exerted by his parents and family. The child of parents who provide affectionate and consistent care, correct instruction and example, who can offer support and protection and yet give sufficient freedom for growth and development has little need or inclination to become seriously delinquent. He has found the world a friendly place. He has not built up abnormal hostilities. He has learned to trust others. He feels worthy of love and respect. He faces new situations with at least some security and confidence. A solid foundation has been laid for the development of normal self-discipline and control.

In the eyes of the law, a child under eight years of age is incapable of forming the necessary intention to commit a crime. Under the age of 14 years there is a prima-facie presumption — often easily rebutted — of a similar incapacity. Thus, in many cases a child cannot be brought to court to answer for his misdeeds unless he has become or is likely to become so wayward that he can be classed as an uncontrolled child. So by the time a child comes to court he has already acquired certain habits and his redemption will be more difficult from then onwards.

It is not my purpose in this brief address to justify the laws relating to the treatment of young offenders or to give an historical survey of how those laws developed into their present form. It is sufficient to say that if the harsh and retributive penalties of the previous century had succeeded in eradicating crime there would have been no reason to introduce any other methods. However, during the past 70 years or so the legislatures throughout most of the world have looked on the young offender with more understanding eyes in the hope that by reforming him they will make him useful both to himself and to society. Thus, for example, we read in the *Juvenile Courts Act* (S.A.) the following principle for the courts to observe:

> Every Juvenile Court in making any order against a child shall have regard to the welfare of the child and the desirability of removing him from unsuitable surroundings and making proper provision for his education and training.

It can therefore be seen that in the case of a juvenile (i.e., a child under 18 years of age) it is only incidental if the punishment fits the crime. What is important is that the court order should fit the offender.

It must not be thought, as sometimes it seems to be, that those who administer the laws in relation to children are devoid of the same feelings of anger over destructive and wanton conduct as the public express. A few days in the juvenile court would, however, serve to show the futility of deciding on purely retributive or punitive sentences before one has heard not only about the offence but also about the offender. What is sauce for the goose may be sauce for the gander, but only because they are the same sort of bird. Many, however, apply this reasoning in a general way, which is as fallacious as saying that what is sauce for the goose is sauce for the plum pudding. Moreover, I have yet to meet the parent who would not plead for consideration and leniency when his or her own child is concerned, at least on his first offence. As about 70% of the offenders commit only one offence, it can be seen that the problem is not that boys do not learn their lesson but that they do not learn the lesson of other boys. Thus, although court orders will have little effect upon the new offenders of tomorrow, they do have an immediate effect upon the majority who are subject to them now. They also have a significant effect on very many more who offend a second time or even more often.

In the juvenile court it is apparent that the delinquent child presents a problem which is not so easily solved as some people would think. In my last annual report I stated that mental ill health, in the sense in which that term is used by the Mental Health Association, is present in a concentrated form among the small percentage of the juvenile population which appears before it.

Perhaps the easiest way of explaining what I mean is to present some of the problems which have come before me recently.

CASE I.—A boy, aged 12 years, was charged with stealing. This was his third appearance. His first was when he was nine, and his second was at the age of 10. He was a dirty and shabby boy, though the welfare officers reported that he had been making an effort to improve himself. His mother had deserted the family when he was seven. He lived with his father and a woman whom society would euphemistically call his *de facto* wife. The home was squalid, and the woman was drunk when the welfare officer visited the home. Many complaints had been received about the boy roaming the streets unsupervised and in bad company. He was a repeated truant from school, and his teacher considered he was uncontrollable. On his first appearance in court he was committed to a State institution for neglected children, and placed in an opportunity class. The next year his father murdered the woman he lived with. At the State institution the boy was described as irresponsible and resentful over correction, quick tempered and fond of the limelight. He absconded seven times.

CASE II.—A boy, aged 15 years, had an intelligence quotient of 62. His mother was also feebleminded and she and her 10 children, five of whom were illegitimate, had been deserted by her husband. The boy had 15 jobs in 12 months, losing each one through inability to concentrate on his work. If jobs had been more scarce he would probably have been unemployed most of that time.

CASE III.—A boy, aged 14 years, had been in institutions since he was four years of age, when his father obtained a divorce for adultery. The boy was then placed in an orphanage, where his mother saw him only on his birthdays and at Christmas. After several abscondings the orphanage refused to have him back. Four years ago he spent some holidays with his mother, who had by then remarried. After these holidays the stepfather refused to have him back as he did not fit in with the children of his second marriage. The previous Christmas, while the stepfather was away on business, the boy ran home again to his mother, but he has now been forbidden to remain there.

CASE IV.—A boy, aged 13 years, was the son of a Russian father and a German mother. The father had a family by a previous marriage in Russia, which he said he supported, with the result that his present wife received no housekeeping allowance. In court, the father admitted that on occasions he bound his son's feet and hands with cords before flogging him with a whip until the child was nearly insensible. The father was often under the influence of drink and refused to allow his son any outings, even to church. After one of his father's drunken bouts the boy ran away from home. When he did so his father locked the house and the boy had to sleep outside. He stole food during this period. The father was sent to gaol for contributing to his son's delinquency, and the child was placed under the control of the Welfare Department.

CASE V.—A boy, aged 14 years, illegally used a bicycle in April, 1957, and stole a few articles, and later the same year committed similar offences. His school results were described as excellent, but he had sometimes absconded from school and home. He could not stand up to his school mates teasing him about his father who had been convicted of a criminal offence. Supervision by a probation officer resulted in improved school attendances for 15 months, but he then truanted again when teased over his parents' inability to provide money for school books and proper clothing. He slept on the banks of the Torrens River, in parklands and elsewhere. Both his father and grandfather thrashed him for this and for petty pilfering. Once he stole two ducks for his mother, another time he stole money his mother gave him to pay an account. In the family home were living his father and stepmother and grandparents and a three-years-old daughter of the co-respondent in his father's divorce action. His mother's present husband had recently gone off with his father's sister, and even his grandmother and grandfather had a "boy friend" and "girl friend" respectively. The mother, though divorced, visited the home regularly, and was equivocally reported to be "on good terms with all". When last before the court, this boy asked to be sent to the reformatory as he said the school tuition was best there.

This list could be added to indefinitely, but by now I wonder how many of you have been concerned as to what offences these boys committed. Would your judgement of them have been much influenced by whether they took a car, stole money from milk cans, or broke into a garage? The newspapers would usually have reported only the offence and nothing about the offender himself except his previous offences, if any; but the real importance of the offences is to emphasize the consequences to society of the offender's inability to cope with the influences and conditions around him. How easy it is for those of us who have had advantages in life to stand in judgement on those who, embittered by their personal experiences, rebel against a society to which they owe nothing or who, through poor example, have learned no respect for the rights and property of others.

The courts, in their aim to cure the offender's mental ill health, cannot adopt any stereotyped remedy any more than a doctor can do so for many physical ailments. I am told that mental unhappiness can cause physical ailments, just as physical ailments can cause mental illness. While a juvenile court magistrate would probably act with severity if his own child committed a crime, he must be careful when judging other people's children to know all about their circumstances. In some cases a whipping or a detention order might be proper, but, as one writer has pointed out: "What is done with them must have relation to what can be done for their own and hence for society's best good. No other principle is either social or intelligent." What might be a salutary lesson in one case might in another serve only to increase the feeling of injustice and thus make the nuisance more permanent.

All the foregoing cases I have quoted concerned children who were deprived of parental love and the security of a good home. It would be naïve to believe that such children would respond to any order which is based solely on their obligation to society when society as they have known it has done so little for them. When orders are made against a child merely to mark the degree of society's disapproval of the offence, fresh outbreaks can be expected. As an instance of this, the Board of Education in England, after a two-year inquiry, reported in 1920 that, in towns where official birching (as distinct from parental whipping) was most frequently used, four out of every five boys so punished committed fresh offences within those two years, and a quarter were recharged within a month. There was considerably more recidivism after this type of treatment than after any other. In 1925, however, after such punishment had been virtually abandoned and more constructive orders made, 311 children were charged with offences at Old Street Police Court compared with 1050 children so charged in 1917, when birching was frequent.

The Barry report on this aspect states:

> The use of punishment for the control and prevention of juvenile delinquency is a subject on which strong views for and against are held in the community. We think it is a correct statement of expert opinion, however, that a predominantly punitive approach by society to juvenile delinquents is not only undesirable but is certain to defeat itself.

It is time now to present the picture statistically. There are, of course, causes of mental ill health other than those which appear in the cases I have cited, but I have concentrated upon the unhappy home — usually a divided one — because this factor is the one which is most prominent in delinquency. In trying to determine what influences a child to become delinquent, statistics of various factors are kept by courts. When a factor reappears repeatedly and pronouncedly more often in the case of delinquents than in the case of non-delinquents it may rightly be considered a precipitating cause of delinquency. The following figures from the Adelaide Juvenile Court in 1957 agree with those elsewhere, and the conclusions are irresistible.

1. Of the delinquents, 43% lived with only one parent or with neither parent. Very many more lived in homes in which there was serious friction. In a further large number of cases in which mental ill health could not be determined, the delinquent lived with a parent and stepparent. The rise in the number of divorces in South Australia is shown by the following figures: in the 1920's the average was 65 *per annum*; in the 1930's, 311; in the 1940's, 782; and in 1953 (peak year), 924. In the peak year of 1953 the home lives of 715 children were disrupted by divorces.

2. In 37% of the delinquency cases the parents themselves admitted a state of affairs which had clearly contributed to the delinquency and for which they or one of them were to blame. The true figure would be greatly in excess of this, as parents cannot be expected to reveal their own shortcomings.

3. Housing conditions were poor or crowded in 43% of the cases. This factor is mentioned not so as to imply any emotional unhappiness in the child, but merely because it has a bearing on the next factor.

4. Of the offenders, 60% acted in concert with others, and 70% had less than good companions.

If children do not find contentment in their own homes they will seek it elsewhere, and it is significant how often the members of a gang come from similar environmental conditions, such as broken homes, have drunken fathers, and so on. Once they are together they, no less than adults, will often behave quite differently from the way they behave when alone.

I have no more time to deal with other factors in delinquency. As I have said, my intention has been to emphasize the main ones. The failure of parents can be traced to a selfish lack of self-control or apathy over their children, and in many cases to a positive plan of allowing their children the right of "self expression" without supervision or discipline. I am satisfied that the delinquency figures would drop at least 60% if all parents would undertake their duties of control and good example.

To summarize my remarks and bring them clearly within the title to this address, I would quote again from the Barry Report on Juvenile Delinquency:

> It is accepted that the home is the primary and most important factor in a child's development and that the basis of adult mental health is laid down in infancy and

childhood. Health, as defined by the Constitution of the World Health Organization, 1947, is a "state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity". Dr. J. W. D. Pearce has pointed out that, if all parents enjoyed such health, their children would be likely to do so also. And if all parents were good parents the incidence of delinquency would fall rapidly, because parents who are incompetent or careless or worse are the greatest contributors to maladjustments in children which express themselves in delinquency. Unwise handling by parents of the small emotional situations that arise constantly in family life can create in a child an attitude of antagonism, first to the family and then to others in authority, and sometimes may lead to appearance in a Juvenile Court. But more important . . . is the parental indifference which may either lead the child to grow up without parental guidance or lead him to assert himself often by apparently senseless delinquency to test the interest and affection of his family.

So important has the aspect of family life been considered by the New South Wales Government that last year it created a new ministry called the Ministry of Child Welfare. This ministry, which incorporates the work of the Social Welfare Department, aims to reach the whole family and has immediately embarked on a programme designed to enlist, through the medium of full-time lecturers, the cooperation and support of the public on the vital significance of good homes.

I cannot leave this subject without a reference to the value of a religious faith. To some it may appear to be out of place in a factual paper to refer to anything of a controversial nature. Nevertheless, this matter, too, has been studied by the committees appointed to investigate the causes of delinquency, and I will merely quote the following extract from the Mazengarb Report on Mental Delinquency (New Zealand, 1954).

> The consensus of opinion before the Committee is that there is a lack of spiritual values in the community. This is not merely because of the general temper of society and standards of morality. Most people would affirm some sort of belief in God but are unable to relate it to their daily lives. It may be a matter of argument that morality is dependent on religion, but the structure of western society and our codes of behaviour have in fact been based on the Christian faith. If this faith is not generally accepted the standard of conduct associated with it must deteriorate . . . The acceptance of the Christian position cannot fail to promote good conduct in all fields . . . It is clear that other things being equal a home with a real religious atmosphere is a good safeguard against immorality. The practice of family religion is to be strongly endorsed. . . . During the last century it was strongly urged by some scientists that a religion based on faith was untenable. Man, it was contended, should accept only what could be provided by reasoning from observed facts. This intellectual standpoint helped to undermine the authority of the churches.

It would take too long to cover this aspect fully. I could with time quote instances in the juvenile court in which a failure to observe the Ten Commandments has produced social evils and personal misery of an indirect nature, such as the fate of the uncontrolled girls who are now in reformatories, but whose conduct only followed the pattern of their adulterous parents. The value of the injunction to honour our fathers and mothers has likewise been made clear in the many cases in which delinquency has resulted from a weakening of the parent-child relationship. Since, as the Masengarb Report states, most people affirm a belief in God, it will not be necessary to convince them of the need to obey the first commandment, which warns us against a belief in our own self-sufficiency. The unbeliever usually agrees with the wisdom behind most of these commandments, and he might well pause, therefore, before rejecting those which deal with the acceptance of the Deity, and consider whether it is not now necessary to reaffirm and live up to the Christian faith to meet the challenge of atheist communism. This at any rate is the firm belief not only of our spiritual advisers, but also of the legal profession headed by the chief justices in each State as the "Call to the Nation" witnesses. Each word in that document has been carefully weighed and valued, and no doubt edited by the great men whose signatures it bears. The concluding words, "Fear God, Honour the King", therefore carry a special significance and persuasion, especially when adopted by laymen whose training and ability fit them for a right judgement.

A COMPARISON OF STRAINS OF STAPHYLOCOCCUS ISOLATED FROM THE MOUTH OF TWO DIFFERENT GROUPS OF CHILDREN.[1]

By JENNIFER TAPLIN[2] AND N. E. GOLDSWORTHY,
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ATTENTION has recently been sharply focused on the importance of the staphylococcus as an infective agent, and it was therefore decided to extend the observations of other workers on the distribution of the various species of *Staphylococcus* by comparing their occurrence in the mouths of two groups of children, one living as a semi-closed community in a children's home (Hopewood House, Bowral, New South Wales) and the other a group of children of the general population (metropolitan Sydney). Earlier investigations (Goldsworthy, 1953; Singer, 1952; Jordan *et alii*, 1956; Knighton, 1957) had indicated that a majority of subjects harboured strains of staphylococcus in the mouth in so far as these organisms could be isolated from saliva, although Martin and Whitehead (1949) were able to isolate *Staphylococcus pyogenes* from the saliva of only two out of 50 subjects examined.

Apart from the bearing which this study has upon the oral flora in general, a certain epidemiological significance attaches to the presence of pathogenic organisms in the mouth. Massler and MacDonald (1950) found in 19 of 77 persons *Streptococcus pyogenes* on the anterior gingivæ and not in their throat. Duguid (1946), after investigating the dissemination of pathogens from the respiratory tract, concluded that "the danger of air borne infection should be assessed not in terms of the occurrence of throat carriage of pathogenic organisms but in terms of the occurrence of oral and nasal carriage". In support of the importance of the dissemination of organisms from the mouth, Jennison (1942) has published photographs to show that, particularly in sneezing, as many as 40,000 droplets may be expelled, the vast majority of them from the mouth. It is therefore important to recognize the possibility of distributing pathogenic and even antibiotic-resistant pathogenic strains of staphylococcus by means of the oral secretions.

Materials and Methods.

Selection of Children and of Strains of Staphylococcus.

In the early morning, before either food or drink was taken, a sample of activated saliva[3] was collected from each of the 83 children comprising the Bowral group. Four to eight hours later the saliva was distributed (by spreading 0·1 millilitre with a sterile glass spreader) over the surface of a selective medium—nutrient agar containing 7·5% sodium chloride and 10% defibrinated sheep's blood. The cultures were examined after incubation at 37° C. for 24 hours and 48 hours.

The plates were then piled haphazardly on the bench and taken one by one for examination. The number of colonies on each plate was determined, and from each plate representative colonies showing various degrees of hæmolytic activity and/or pigmentation were removed for further examination, until between 100 and 120 colonies had been selected; this involved the use of 65 plates. The

[1] Studies of the Flora of the Mouth. XI.

[2] Working with the aid of a grant from the National Health and Medical Research Council of Australia.

[3] The decision to use activated saliva (obtained by stimulating the flow by chewing paraffin wax) as the experimental material for the Bowral group was made because samples of saliva were being collected for other purposes and were thus readily available.

remaining 18 plates were discarded because it was considered that approximately 100 strains represented a sufficient number to yield significant results. The numbers of children in each age and sex group yielding the 100 to 120 selected colonies are set out in Table I.

TABLE I.
Age and Sex Distribution of the Two Groups of Children.

Age. (Years.)	Bowral.			Metropolitan Sydney.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
4	1	0	1	0	0	0
5	1	0	1	0	0	0
6	3	8	11	5	4	9
7	3	4	7	2	7	9
8	1	5	6	2	4	6
9	10	7	17	9	7	16
10	9	8	17	10	9	19
11	1	4	5	3	3	6
Total ..	29	36	65	31	34	65

From a large metropolitan school a group of 65 children, corresponding as nearly as possible to the Bowral group in age and sex distribution, was chosen from 98 examined (Table I). Saliva was obtained by rubbing sterile swabs, such as are used for taking throat swabs, over the oral mucosa and teeth. It was not possible to obtain activated saliva, because this would have seriously interfered with the procedure being followed by a team of workers engaged in a dental survey at the school. Strains (100 to 120) were selected on the same basis as for the 65 Bowral children.

All strains destined for further examination were stored in Robertson's cooked meat medium at 5° C. At the conclusion of the study there were satisfactory data for 111 strains in the Bowral series and for 114 strains in the metropolitan Sydney series.

Examination of Strains.

Details of the physiological tests used to determine the biological characteristics of the strains are set out elsewhere (Taplin and Goldsworthy, 1958).

Results.

Number of Strains of Staphylococcus Present in the Mouth.

As has been indicated, nearly all the children in the Bowral group had on a previous occasion yielded staphylococcus from the mouth. Likewise on the present occasion 81 of the 83 children yielded staphylococcus, but the numbers isolated from the individual children varied considerably. In the metropolitan Sydney group, of which we had had no previous experience, no fewer than 95 of 98 examined yielded staphylococcus. Table II indicates the approximate distribution of the numbers of organisms in the two groups, which were for the present purposes limited to 65 children each (see "Materials and Methods").

Classification of Strains on the Basis of Biological Characters.

Table III shows the number of strains in each of the two series which reacted when subjected to the particular test indicated. Where satisfactory data are not available for all strains in the series, the results are expressed in terms of the number of strains for which such data are available, e.g. for the methyl red test 106/107 and 103/110, not 106/111 and 103/114.

On the basis of the descriptions set out in Bergey's "Manual of Determinative Bacteriology" (1948), we have classified the strains as shown in Table IV.

On the basis of the descriptions given by Shaw, Stitt and Cowan (1951), the strains can be classified as shown in Table V.

Table VI shows the relative numbers of coagulase-producing strains isolated from each group of children.

TABLE II.
Number of Strains of Staphylococcus in the Mouth of the Children of Each Group.

Number of Colonies of Staphylococcus on Plate.	Number of Children.	
	Bowral. (Activated Saliva.)	Metropolitan Sydney. (Mouth Swabbings.)[1]
0 to 100 ..	37	55
101 to 1000 ..	25	9
More than 1001	3	1
Total ..	65	65

[1] The apparent preponderance of low counts of staphylococcus among the majority of these children may, at least in part, be the result of the method by which saliva was collected.

All coagulase-producing strains fermented glucose, sucrose and lactose, and all (except one strain accidentally omitted) reacted to the methyl red test.

TABLE III.
Biological Characteristics of the Two Series of Strains.

Test or Characteristic.	Number of Strains.	
	Bowral. (111)	Metropolitan Sydney. (114)
Pigment:		
Golden	48	14
Yellow	8	26
Cream	28	15
White	30	63
Morphology conformable to recognized description	111	114
Hæmolysis on sheep blood agar	78	68
Hæmolysis on salt blood agar	97	96
Catalase production	109/110[1]	114
Methylene blue reductase production	109/109	114
Nitrate reduction	90	64
Proteolysis:		
Gelatin liquefaction	100	51
Indole production	0	0
Ammonia production	97	36
Hydrogen sulphide production	97	104
Fermentation:		
Glucose	111	114
Sucrose	111	114
Lactose	108	103
Raffinose	0	2
Starch	0	0
Inulin	0	0
Salicin	2	1
Glycerol	99	106
Mannitol	74	63
Methyl red test	106/107	103/110
Voges-Proskauer test	68/110	48
Litmus milk reactions:		
Acid and clot	71	40
Acid but no clot	32	13
Alkaline	4	53
No change	4	8
Growth on synthetic medium ($NH_4H_2PO_4$ as sole source of nitrogen)	0	0
Coagulase production	64	15
Penicillin sensitivity	95	98

[1] The records for one strain were deficient in relation to catalase production, so that only 224 strains are shown as tested for catalase. One of these 224 failed to give evidence of catalase-production, but is included as a staphylococcus because its other properties were in conformity with the accepted definition.

Table VII shows the distribution of strains in each of the two series according to coagulase-production and penicillin-sensitivity. Of coagulase-producing strains a far larger proportion of penicillin-resistant strains occurred in

the Bowral group, and of coagulase non-producing strains a far larger proportion of penicillin-resistant strains occurred in the metropolitan Sydney group. The only contact which the Bowral group had had with penicillin was in the form of an ointment which was used during a mild outbreak of impetigo at least three years prior to the isolation of the strains herein described.

TABLE IV.

Classification of the Strains of Staphylococcus (Micrococcus) (Bergey).

Species.[1]	Bowral. (111)		Metropolitan Sydney. (114)	
	Number of Strains.	Percentage of Strains.	Number of Strains.	Percentage of Strains.
Staph. pyogenes:				
Typical	16 } 64	57·7	5 } 15	13·2
Atypical	48 }		10 }	
Staph. epidermidis:				
Typical	0 } 26	23·4	3 } 33	28·9
Atypical	26 }		30 }	
Staph. aurantiacus:				
Typical	2 } 8	7·2	0 } 25	21·9
Atypical	6 }		25 }	
Staph. candidus:				
Typical	1 } 2	1·8	0 } 31	27·2
Atypical	1 }		31 }	
Staph. flavus:				
Typical	2 } 11	9·9	0 } 8	7·0
Atypical	9 }		8 }	
Staph. citreus:				
Typical	0 } 0	0·0	0 } 2	1·8
Atypical	0 }		2 }	

[1] A strain was designated "atypical" if it failed to conform even in a single character to the description given by Bergey.

Classification of Coagulase-Producing Strains According to their Phage Patterns.

Table VIII shows the distribution of phage patterns within the phage groups.

TABLE V.

Classification of the Strains of Staphylococcus (Shaw, Stitt and Cowan).

Species.[1]	Bowral.		Metropolitan Sydney.	
	Number of Strains.	Percentage of Strains.	Number of Strains.	Percentage of Strains.
I. *Staph. aureus:*				
Typical	28 } 63[2]	57·3	5 } 15	13·2
Atypical	35 }		10 }	
II. *Staph. saprophyticus:*				
Typical	25 } 33	30·0	23 } 41	36·0
Atypical	8 }		18 }	
III. *Staph. lactis:*				
Typical	10 } 14	12·7	18 } 58	50·9
Atypical	4 }		40 }	

[1] A strain was designated "atypical" if it failed to conform, even in a single character, to the description given by Shaw, Stitt and Cowan.
[2] One strain was omitted from this table because no data were available for methylene blue reductase and the Voges-Proskauer test.

Classification of Coagulase-Producing Strains According to their Phage Groups.

Table IX shows the distribution of the phage groups.

Distribution of Phage Groups Among Coagulase-Producing Strains According to their Reaction Towards Penicillin.

Among the metropolitan Sydney group all coagulase-producing strains were penicillin-sensitive, but in the Bowral group some were penicillin-resistant. Table X shows the distribution in phage groups of the penicillin-sensitive and penicillin-resistant strains respectively.

In an attempt to discover whether milk contributed to the oral strains of staphylococcus in the Bowral children, strains from samples of milk from the herd maintained at the Home were subjected to phage typing (Table XI).

TABLE VI.

Distribution of Strains According to Coagulase Production.

Strains.	Bowral.	Metropolitan Sydney.
Coagulase-producing ..	64	15
Coagulase-non-producing	47	99
Total	111	114

Discussion.

This study permits a broad comparison between a series of oral strains of staphylococcus isolated from a semi-closed community of children and a series from a sample of children in the general population (see columns 2 and 3 of Table III).

Altogether six species were recognized: *Staph. pyogenes, Staph. epidermidis, Staph. aurantiacus, Staph. candidus, Staph. flavus* and *Staph. citreus*. They were each divisible into typical and atypical groups, according as they did or did not conform to the descriptions set out by Bergey (1948). On this basis the principal differences between the two series of strains (Table IV) are as follows: the frequency of occurrence of *Staph. pyogenes* is more than four times as great in the Bowral series; of *Staph. aurantiacus* three times and of *Staph. candidus* 15 times as great in the metropolitan Sydney series. There is no great difference in the frequencies of *Staph. epidermidis, Staph. flavus* and *Staph. citreus*.

TABLE VII.

Correlation between Coagulase-Production and Penicillin-Sensitivity.

Strains.	Penicillin Sensitivity.			
	Bowral.		Metropolitan Sydney.	
	Sensitive.	Resistant.	Sensitive.	Resistant.
Coagulase-producing ..	49	15[1]	15	0[3]
Coagulase-non-producing ..	46	1[2]	83	16[4]
Correlation coefficient = r[5]	0·3		0·16	

[1] 23·4% of the 64 coagulase-producing strains were resistant (15/64).
[2] 2·1% of the 47 coagulase-non-producing strains were resistant (1/47).
[3] None of the 15 coagulase-producing strains was resistant (0/15).
[4] 16·2% of the 99 coagulase-non-producing strains were resistant (16/99).
[5] $r = \sqrt{\frac{\chi^2}{N}}$ where N = total number of observations made.

Another point of interest is the penicillin sensitivity of strains designated pathogenic on the basis of coagulase-production (Table VII). In the Bowral series 15 out of 64 strains were resistant, whereas in the metropolitan Sydney series the corresponding figure is none out of 15. Although the numbers of strains are small, these results are in line with those of Rountree and Thomson (1949) and of others as demonstrating the greater frequency of penicillin-resistant strains in semi-closed communities, although there is an obvious difference between a hospital and a children's home.

Because hæmolysis on ordinary nutrient blood agar is generally the first evidence of possible pathogenicity obtained by the clinical bacteriologist, the correlation of

TABLE VIII.

Classification of Coagulase-Producing Strains According to Phage Patterns.

Phage Group.	Bowral. Phage Pattern.	Bowral. Number of Strains.	Bowral. Total Number of Strains in Group.	Metropolitan Sydney. Phage Pattern.	Metropolitan Sydney. Number of Strains.	Metropolitan Sydney. Total Number of Strains in Group.
I	80[1]	3	7	29	1	3
	52	1		29/52	1	
	29	2		52/80	1	
	29/52	1				
II	3B/3C/55	5	9	3A/3B	1	3
	3C/55	3		3B/55	1	
	55	1		3C/55	1	
III	6/7/47/53/54/75	6	10			
	6	1				
	7	1				
	7/31B/47D	1				
	42E/6/7/54/73	1				
IV	42D	4	4			
Non-classifiable.	42D/44	2	12	3A/6/73/75	1	1
	42D/75	1				
	42D/6/7/54/73/75	1				
	42D/29/52/80	2				
	42D/42E/6/54/73	1				
	42D/29/44/52/80/42E/6/7/47/54/73/75	1				
	42D/29/44/52/80/42E/6/7/47/53/54/73/75	1				
	52/80/6/79/47C	1				
	52/80/6/47C	1				
	29/77	1				
Non-typable	—	—	22		—	8
Total			64			15

[1] 80 was previously known as 52A.

TABLE IX.

Classification of Coagulase-Producing Strains According to their Phage Groups.

Location of Children.	Children Yielding Coagulase-Producing Strains.	Strains. Coagulase-Producing.	Phage Groups. I.	II.	III.	IV.	Non-Classifiable.[1]	Non-Typable.
Bowral	55	64	7	9	10	4	12	22
Metropolitan Sydney	15	15	3	3	0	0	1	8

[1] In the Bowral series the non-classifiable strains are as follows: three strains reacted to phages of groups III and IV, four strains to phages of groups I and IV, and five strains to phages of groups I and III. In the metropolitan Sydney group the non-classifiable strains reacted to phages of groups II and III.

TABLE X.

Distribution of Phage Groups Among Coagulase-Producing Strains of the Bowral Group According to Their Reaction Towards Penicillin.

Reaction Towards Penicillin.	Strains. Total.	Phage Groups. I.	II.	III.	IV.	Non-Classifiable.[1]	Non-Typable.
Resistant	15	0	0	6	1	0	8
Sensitive	49	7	9	4	3	12	14
Total	64	7	9	10	4	12	22

[1] See footnote to Table IX.

this property with coagulase-production was determined: only four strains classified as pathogenic coagulase-producing (*Staph. pyogenes*) failed to show hæmolysis, and these were all in the Bowral series (64 strains). Nonetheless, it is disconcerting to find four out of 64 pathogenic strains failing to show hæmolysis on blood agar plates. Among the metropolitan Sydney strains there was a surprisingly large number of strains which caused hæmolysis (68 out of 114), as against the relatively small number which produced coagulase (15 out of 114); all these 15 coagulase-producing strains were hæmolytic on nutrient blood agar.

Bacteriophage typing of the coagulase-producing strains did not reveal a preponderance of any particular strain (Table VIII). However, there was a larger proportion of non-typable and Group IV strains in the Bowral (mouth) series than is usual in a collection of strains isolated from the nose, throat or lesions.

Thatcher and Simon (1956) isolated a series of strains of staphylococcus from dairy products, and compared their biological properties with those of strains from clinical material. All the dairy strains were lysed by phage 42D (Group IV), whereas such strains were rare among the clinical strains.

Because the Bowral children drink raw milk, it seemed of interest to examine both cream and deposit from samples (some fresh, some two days old) of the milk for evidence of the presence of strains of staphylococcus similar to those isolated from the children. Of 16 strains isolated from two different samples of milk from one herd, 14 produced coagulase. Phage typing (Table IX) of these

TABLE XI.

Phage Patterns of Milk Strains and their Reaction Towards Penicillin.

Phage Pattern.	Number of Strains.	Reaction Towards Penicillin.
52	1	Sensitive.
54	1	Sensitive.
42D/29/52	6	Sensitive.
42D/29/52/54	2	Sensitive.
42D/52	1	Sensitive.
29/44/52/80	1	Sensitive.
Non-typable	2	Resistant.

14 disclosed the presence of nine strains which fell into Groups I and IV. Rountree, Freeman and Johnston (1956) examined 57 strains from the milk of a mastitis-affected herd: "33 were lysed by 'phage 42D or by other 'phages not attacking human strains; of the remaining 24 strains 22 belonged to 'phage pattern 42D/29/52." Of the 14 strains from the two samples of milk tested by us, eight had a phage pattern which included the same sequence, namely 42D/29/52, and had sufficient phage reaction in common to be regarded as identical.

Table VIII shows that there were four phage Group IV strains among the 64 coagulase-producing strains in the Bowral series, and that another nine strains (non-classifiable) were lysed by phage 42D as well as by other phages; there were no such strains among the metropolitan Sydney series. The milk strains and the human strains were not obtained at precisely the same time, so that a direct comparison in time between the strains is not possible. However, the phage patterns might at least suggest that the milk strains have contributed to the mouth flora of the Bowral children.

Among the Group III strains in the Bowral series 6 out of 10 are identical; this is evidence either that several children acquired the strain in question from a common source or that the strain was passed from one child to another. In the metropolitan Sydney series, the absence of Group III strains is unusual. Nevertheless, as compared with the intensity of cross infection in hospitals, the amount of cross infection in the Bowral group is relatively insignificant, a result which agrees with that of Thompson and Schwabacher (1951). Concerning the carrier-rate, Thompson and Schwabacher found for the penicillin-resistant strains a maximum carrier-rate of 10% among the boys of a boarding school, whereas the rate was 27% (15 out of 55) for the children in the Bowral home. The number of carriers of *Staph. pyogenes*, both penicillin-resistant and penicillin-sensitive, was in our experience nearly four times as high in the Bowral (55 out of 65) children as in the children living in the community at large (15 out of 65).

Summary.

1. Two groups of 65 children, similar in age and sex, one living in an institution at Bowral, the other living in the general population of a large city, each yielded a series of rather more than 100 representative strains of staphylococcus from the mouth.

2. The two series of strains were classified on the basis of their physiological reactions.

3. Of the Bowral group of children, nearly four times as many yielded coagulase-producing (pathogenic) strains as did those of the metropolitan Sydney group.

4. Among the 64 pathogenic strains from the Bowral group 15 were penicillin-resistant. Of 15 pathogenic strains isolated from the metropolitan Sydney group, none was penicillin-resistant.

5. Phage typing failed to demonstrate any predominant strain among the Bowral series of strains.

6. Raw milk drunk by the Bowral group apparently contributed to the oral strains, but did not appear to be an important source of *Staph. pyogenes* for these children.

7. The results support those of other observers as to the difference in distribution of pathogenic and non-pathogenic strains in semi-closed and in open communities of children.

8. The results appear to imply (*a*) a possible epidemiological significance for the oral carriage of pathogens and (*b*) the passage of the organisms from child to child within the Bowral group.

Acknowledgements.

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Reports of Cases.

ADRENOCORTICAL ADENOCARCINOMA.

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MASCULINIZING TUMOURS of the adrenal cortex are not common, and very few have been reported in the Australian literature. A case of adrenocortical adenocarcinoma is reported here.

Clinical Record.

A boy, aged two years, was first examined on June 8, 1955, with a history that one year previously his mother had noticed that his penis was larger than normal. Three months previously pubic hair had begun to grow. His mother said that he was unusually strong for his age, and had been able to lift a small chair off the floor at the age of one year. His general health was good, and there had been no loss of weight.

On examination, he was a healthy, sturdy boy, with downy hair on his back and thighs. The penis was much larger than normal, being the size of that of a boy of twelve. There was a marked growth of pubic hair (Figure I). The testicles were normal in size, although the right was larger than the left. There was generalized increased muscle power, and the boy appeared very strong for his age. On abdominal examination, no abnormal mass was felt.

The main causes of acquired sexual aberration (Bishop, 1947) are: (i) adrenocortical hyperplasia or tumour; (ii) basophil cell tumour of the anterior pituitary lobe and tumour of the pineal body and hypothalamic region; (iii) interstitial cell tumour of the testis; (iv) granulosa cell tumour and arrhenoblastoma of the ovary.

It was thought at the time that his lesion was probably adrenal dysfunction, but it was necessary to dismiss these other possible causes. A radiographic examination of the skull revealed a normal pituitary fossa. A skiagram of the chest and abdomen showed no significant abnormality. The fact that the right testicle was slightly larger than the left was kept in mind, but it was not considered to be of great import.

Presacral perirenal pneumography was performed, approximately 200 cubic centimetres of air being injected on either side (Blackwood, 1951). This showed clearly that on the upper pole of the left kidney there was a round tumour of homogeneous density approximately one and a half inches in diameter; this was shown more distinctly by intravenous pyelography, which demonstrated the renal outline. The tumour was distinct from the splenic shadow. Because of the bulk of the liver being on the right side, the right kidney was not so well shown, but no abnormality was seen in the suprarenal region. The oblique view demonstrated the renal regions on either side. The left kidney was seen to be almost twice the size of the right kidney, and this was verified at operation; but both kidneys appeared normal in function, when an intravenous urographic examination was made. A radiographic examination of the wrist joints revealed some premature ossification of the epiphyses. The electrocardiogram was normal. A full blood count, and the results of serum sodium, serum potassium, serum chloride and blood urea estimations and a glucose tolerance test were within normal limits. During this period in hospital the blood pressure ranged between 190/120 and 110/75 millimetres of mercury. The urinary 17-ketosteroid excretion was 3·5 milligrammes in a 24 hour specimen (normal, 0 to 2 milligrammes up to eight years of age).

An operation was then considered; but it was thought that as (i) signs had been present for one year and had evolved gradually, (ii) the body growth had been maintained and (iii) the ketosteroid level was not greatly elevated, the condition might be hyperplasia and not a tumour. Because of this, the response to the administration of cortisone was tested, in the belief that should the condition be hyperplasia the ketosteroid level would fall. Fifty milligrammes of cortisone in 24 hours were given by intramuscular injection for two weeks, by which time the ketosteroid excretion had risen to 5 milligrammes in 24 hours. This was presumptive evidence of tumour.

FIGURE I.
Photograph of the child on presentation.

On July 15, 1955, an incision was made extending from the umbilicus towards the tip of the eleventh rib, which was resected subperiosteally. The pleura was preserved intact. The abdomen was opened and the diaphragm incised for approximately one inch. The spleen and pancreatic tail were mobilized, and a plum-coloured encapsulated tumour, with several large veins coursing over its surface, was exposed. There was no difficulty in freeing the tumour from the surrounding structures. It had only one vascular pedicle consisting of a large artery and vein passing medially, apparently towards the aorta and vena cava. During the manipulations necessary to remove the tumour the systolic blood pressure rose to 200 millimetres of mercury, and the radial pulse disappeared, to reappear again, with equivalent fall in the blood pressure, when manipulation was stopped. The

right adrenal region was palpated with negative findings, except that the systolic blood pressure rose to 180 millimetres of mercury. The whole procedure, from induction of anæsthesia to the patient's return to bed, lasted for one hour and forty minutes. During the operation an intravenous drip administration of glucose saline solution was maintained.

After operation the child was maintained on intravenous drip administration of solution containing "Eschatin", because of the possibility of right adrenal hypoplasia.

FIGURE II.
Suprarenal tumour.

However, this resulted in a hypertensive condition for 48 hours after operation; consequently it was stopped. Daily eosinophil counts and serum potassium and serum sodium estimations were made, but apart from a minor rise in the number of eosinophils no abnormality was detected, and the cortisone "cover" was stopped after two days. Apart from some degree of ileus, which subsided with gastric suction, the child made an uneventful recovery.

Six months after operation the child was well, and had lost nearly all the pubic hair and all the downy hair on his back and thighs. His penis was approximately the same size. The urinary 17-ketosteroid excretion level was 0·4 milligramme in 24 hours. Two and a half years after operation he had grown appreciably, and apart from the fact that his penis was larger than usual for his age, and his voice was very deep, he was a normal boy. His 17-ketosteroid excretion was within normal limits.

Pathological Findings.

The operative specimen was a solid, hæmorrhagic tumour, measuring 1·75 inches (4·3 centimetres) by 1·5 inches (3·75 centimetres). It had a thin capsule surrounding it, which was torn in one place, and a small portion of the tumour protruded through it (Figure II). Microscopic examination of the specimen showed that it was an adrenal cortical adenocarcinoma, which had apparently arisen in an adenoma. Although most of the tumour was encapsulated, and the general histological pattern was adenomatous, a cellular aberrancy associated with not infrequent hyperchromatism and mitoses indicated the malignant change. In other sections there were foci of carcinomatous change, but no invasion of vascular spaces was apparent.

Comment.

The active principles of the adrenal cortex may be divided into four distinct groups, the androgenic, the corticoid, the œstrogenic and the progestational hormones (Fraser, 1953). In the clinical picture in cases of tumour, any of these hormones may play a part; but in this case the androgenic hormone alone was involved. The result was isosexual precocity in a male child.

The most useful guide to the patient's ultimate prognosis is the periodic estimation of the urinary 17-ketosteroid excretion. After operation there should be a fall to normal limits, as occurred here. Should there be any local recurrence or metastatic spread, the level would rise rapidly again.

The fact that his penis still remains large is interesting, in that it means probably that once the development has taken place, retrogression is very slow to occur, rather than pointing to a persistence or recurrence of the malignant process.

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BISHOP, P. M. F. (1947), "Disorders of Sex as a Manifestation of Endocrine Abnormalities", *Practitioner*, 158 : 295.

BLACKWOOD, J. (1952), "Presacral Perirenal Pneumography", *Brit. J. Surg.*, 39 : 154.

FRASER, K. B. (1953), "Adrenocortical Tumours", *Australian & New Zealand J. Surg.*, 23 : 2.

Reviews.

The Examination of Waters and Water Supplies. Revised by Edwin Windle Taylor, M.A., M.D., B.Ch., M.R.C.S., L.R.C.P., D.P.H.; Seventh Edition; 1958. London: J. and A. Churchill, Limited. 10" × 6", pp. 852, with 51 illustrations. Price: £5 (English).

THE seventh edition of this textbook, together with the American "Standard Methods", provides the basic information required on water supplies for the use of bacteriologists, medical officers of health, health inspectors and analysts. The sixth and seventh editions have been edited by the Director of Water Examination of the Metropolitan Water Board, London. Previously the book was confined almost entirely to English practice, except for a chapter comparing the broader aspects of English and American practices; in the latest edition reference is made freely to the American field with many direct references to the methods of the American Public Health Association, which considerably increases the book's value as a work of reference.

The general pattern of the book follows that of previous editions, with considerable improvement through rearrangement and addition of new material. There is a new chapter on bacteriological examination of water for reasons other than those related to pollution, and a section on contamination by polluted water of uncooked foodstuffs. The effect on health of nitrates, fluorides and carriers is given, together with brief details of recent water-borne infection. Small-scale sterilization procedures are discussed in disinfection, and additional features are included on swimming pool purification. Included in the chemical procedures are the EDTA methods for determining hardness, photometric methods for estimation of potassium sodium content, and tests for new substances such as surface active material from detergents. Generic nomenclature has been brought up to date, and the membrane filter technique is described. The appendix has been revised to make it more useful by cross reference in the text. The quality of the paper is good, and photographs now replace many of the drawings of microscopic plant and animal life in water.

The subject of radioactivity is introduced for the first time. As with the book's subject matter generally, radio-

activity is discussed with respect to its place in the water supply field, after which its laboratory aspects are dealt with. This serves to emphasize the broad coverage of this volume, which includes not only water supply laboratory practice (with some reference also to sewage and polluted waters), but discusses very fully the significance of most of what is to be found in waters whatever the purpose to which they may be applied.

Lumbar Disc Lesions: Pathogenesis and Treatment of Low Back Pain and Sciatica. By J. R. Armstrong, M.D., M.Ch., F.R.C.S.; Second Edition; 1958. Edinburgh and London: E. and S. Livingstone, Limited. 9¾" x 6¼", pp. 244, with 60 illustrations. Price: 46s. (English).

THE first edition of this book was published in 1952 and was very well received. Six years ago the pathology and the effects of disk collapse were less well known than they are today, and this book gave a simple and well illustrated account of these disorders. Moreover, the advantages and disadvantages of both conservative and operative treatment were discussed without the bias which is usually evident in accounts of this subject.

The author has now revised this book and added comments from recent contributions to the literature. Unfortunately he has not incorporated recent work on discography, which has helped to clarify many of the symptoms arising from disk degeneration, and he has had very little experience of interbody fusion of the lumbar part of the spine. In this regard he shares with other British surgeons a reluctance to make use of these more recent methods of investigation and treatment.

The attitude towards operation for the relief of low-back pain and sciatica has tended to wax and wane in recent years, and it is probably fair to state that there is now less enthusiasm for this form of treatment than existed when the first edition of this book was published. However, the part played by disk disorders in causing backache and sciatica is now more widely recognized, and an understanding of the basic anatomy and pathology of the disks is essential to anyone called on to treat these common disorders. This book can be strongly recommended to anyone, either surgically or conservatively inclined, who wishes to know just what happens when the disk "slips".

Books Received.

[*The mention of a book in this column does not imply that no review will appear in a subsequent issue.*]

"Radiation Doses to the Gonads of Patients in Swedish Roentgen Diagnostics: Studies on Magnitude and Variation of the Gonad Doses together with Dose Reducing Measures", *Acta Radiologica*, Supplement 157, by Lars-Eric Larsson; 1958. Stockholm: Acta Radiologica. 9¼" x 7", pp. 127, with 32 illustrations and 58 tables. Price: Sw. Kr. 30.

An account of a Swedish investigation into a topical problem.

"Experimental Studies on Radioactive Zinc in the Male Reproductive Organs of the Rat", by Bengt Wetterdal; 1958. Stockholm: Acta Radiologica. 9¼" x 7", pp. 83, with 37 illustrations and four tables. Price: Sw. Kr. 30.

From the Isotope Laboratory, Department of Obstetrics and Gynecology, Karoliska Institutet, Stockholm.

"Outline of Fractures: Including Joint Injuries", by John Crawford Adams, M.D., F.R.C.S.; Second Edition; 1958. Edinburgh and London: E. and S. Livingstone, Limited. 8¾" x 5½", pp. 276, with 237 illustrations. Price: 27s. 6d. (English).

A thorough revision published less than two years after the first edition.

"Emergency War Surgery. U.S. Armed Forces Issue of Nato Handbook Prepared for Use by the Medical Services of Nato Nation", United States Department of Defense; 1958. Washington: United States Government Printing Office. 7¾" x 5", pp. 424, with seven tables and 17 illustrations. Price not stated.

A handbook developed by a committee of three surgical consultants representing the military medical services of France, the United Kingdom and the United States assisted by observers and written recommendations from other NATO nations.

"Prescription Proprietaries Guide for Doctors and Chemists, 1957", edited by Geoff K. Treleaven, Ph.C., F.P.S.; 1958. Melbourne: Australasian Pharmaceutical Publishing Company, Limited. 8¾" x 5¼", pp. 864. Price: £5 7s. 6d.

A detailed guide to proprietary preparations, with a list of approved names, a therapeutic index, a section on poisons and information about dangerous drug regulations.

"Atlas of Technics in Surgery", by John L. Madden, M.D., F.A.C.S., with 62 contributing authors; 1958. New York: Appleton-Century Crofts, Incorporated. 11¾" x 8¾", pp. 672, with 293 plates. Price not stated.

Prepared primarily for the practising surgeon and the surgeon-in-training.

"Treatment of Breast Tumors", by Robert S. Pollack, M.D., F.A.C.S.; 1958. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 10" x 6¾", pp. 148, with 47 plates and 16 text figures. Price: 66s.

The author with seven collaborators discusses all practical aspects of the subject.

"Clinical Hæmatology in Medical Practice", by G. C. de Gruchy, M.D., F.R.A.C.P., M.R.C.P. (Lond.), M.C.P.A., with a foreword by J. V. Dacie; 1958. Oxford: Blackwell Scientific Publications. 8¾" x 5½", pp. 632, with many illustrations. Price: 50s. (English).

The author intends the book to be helpful to the general physician and also to the senior and post-graduate student.

"The Comparative Anatomy and Physiology of the Nose and Paranasal Sinuses", by Sir Victor Negus, Hon.D.Sc., M.S., F.R.C.S. (England), Hon.F.R.C.S. (Edin.), Hon.F.R.C.S. (Ireland); 1958. Edinburgh and London: E. and S. Livingstone, Limited. 9¾" x 6¼", pp. 419, with 178 illustrations. Price: 70s. (English).

The title is self-explanatory; the author is well known.

"Chemical Transformations by Microorganisms", by Frank H. Stodola; 1958. New York: John Wiley and Sons, Incorporated. 7¼" x 4¾", pp. 144, with many illustrations. Price: $4.25.

Three chapters deal with the chemical anatomy, organic type reactions and synthetic powers of microorganisms.

"Psychiatry in the British Army in the Second World War", by Robert H. Ahrenfeldt, with a foreword by J. R. Rees; 1958. London: Routledge and Kegan Paul. 8¼" x 5", pp. 328. Price: 35s. (English).

The author is a former Major, R.A.M.C., and Deputy Assistant Director of Army Psychiatry.

"Text-Book of Surgery", by Patrick Kiely, B.Sc., M.D., M.Ch. (N.U.I.), F.R.C.S. (England); Second Edition; 1958. London: H. K. Lewis and Company, Limited. 9¾" x 5¾", pp. 1168, with 605 illustrations. Price: £3 3s. (English).

Written for medical students and young graduates. The author is Professor of Surgery, University College, Cork.

"A Practice of Thoracic Surgery", by A. L. d'Abreu, O.B.E., Ch.M., F.R.C.S.; Second Edition; 1958. London: Edward Arnold (Publishers), Limited. 9¾" x 7", pp. 628, with many illustrations. Price: £5 (English).

The previous edition appeared in 1953. The author has aimed in the present edition to bring the material up to date.

"Effects of Concurrent Infections and Their Toxins on the Course of Leukemia", by L. Pelner, G. A. Fowler, M.D., and H. C. Nauts, *Acta Medica Scandinavica*, Supplement 338; 1958. Stockholm: Acta Medica Scandinavica. 9¼" x 6¾", pp. 48, with illustrations.

Based on work supported by the New York Cancer Research Institute, Inc.

"Renal Angiography during and after Unilateral Ureteric Occlusion: A Long-Term Experimental Study in Dogs", by Torsten Widén, *Acta Radiologica*, Supplement 162; 1958. 9¼" x 7", pp. 103, with 37 illustrations. Price: Sw. Kr. 30.

Part of the studies of renal function in urinary stasis and related problems included in the research schedule of the Malmö Department of Surgery of the University of Lund.

The Medical Journal of Australia

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CARDIAC SURGERY, PAST AND FUTURE.

RECENT YEARS have brought remarkable progress in cardiac surgery, though much remains to be done. The surgical treatment of coarctation of the aorta and patent ductus arteriosus, both congenital lesions, has become a routine matter which, in the best hands and with proper selection of cases, should have a negligible surgical mortality. The operations for these conditions are completely curative and restore the anatomy to normal. On the other hand, mitral valvotomy for mitral stenosis is seldom completely curative, as will be seen from a recent analysis by L. B. Ellis[1] of the results in the first 1000 cases followed one to eight years after operation. The survival rate was better than that reported for comparable groups treated medically; operative and post-operative mortality was greater in the more seriously disabled. At the last follow-up examination 75% of group 3 patients (Classification of New York Heart Association) and 59% of group 4 patients were significantly improved. Unsatisfactory results appeared to be due to inadequate splitting of the valve, the creation of incompetence by surgery, recurrence of rheumatic fever, myocardial failure and recurrence of stenosis. Follow-up investigations elsewhere also have confirmed the importance of adequate surgery. With experience the technique of finger valvotomy undoubtedly improves, but there remain many cases in which the condition is resistant to this approach. A dual attack through the left atrium and the left ventricle is now being used in some hospitals, while C. W. Lillehei[2] has pointed out the advantages of direct visualization of the valve using cardiac bypass. In Fallot's tetralogy also time is showing that among the survivors of the Blalock, Potts and Brock operations, an appreciable percentage deteriorate in the ensuing five to ten years, as M. Campbell[3] has made clear. Closure of the anastomosis, myocardial failure due to the uncorrected abnormality and cerebral abscess are the chief causes of death or disability.

It has become increasingly apparent over the years that in the anatomical abnormalities of the heart, be they congenital or acquired, complete restitution to normal must be the aim. The advent of hypothermia has made this practicable in atrial septal defect of the secundum type, one of the commonest causes of cardiac enlargement and disability in childhood and adult life. It is now generally agreed that surface cooling of the body is superior to direct cooling of the returning venous blood. With hypothermia the surgeon is able to interrupt the circulation completely for six to eight minutes in safety, a period quite adequate for direct suture under vision of the majority of atrial septal defects. The mortality in the first 100 patients treated in this way by H. Swan[1] of Denver was 16%. Growing experience, however, has shown the limitations of the method, and by excluding the poor risk cases Swan himself, T. H. Sellors[2] in London and A. G. Brom[3] in Leyden have been able to reduce the mortality to negligible proportions. Without hypothermia and using the atrial well technique developed by R. Gross[4] in Boston, J. W. Kirklin of the Mayo Clinic has achieved a mortality of less than 2%. Clearly in a disease in which the mean age at death is about 36 years, such a low mortality is mandatory before the operation can be regarded as one of election. It is completely curative and therefore can be regarded as having come of age. Hypothermia also has proved its worth in the treatment of congenital pulmonary valvular and infundibular stenosis with normal aortic root. In valvular stenosis it has the dual advantage of allowing a ventriculotomy to be avoided and the stenosis to be seen and split completely through the pulmonary artery.

Because of the short time available for intracardiac surgery, hypothermia has been inadequate for complete cure of ventricular septal defects, Fallot's tetralogy, complicated atrial septal defects and other rarer lesions. It was obvious that only a complete bypass of the heart and lungs using an artificial "heart" and "lung" would allow the surgeon adequate time for exploration and repair under direct vision. Following the pioneer work of Gibbon in Philadelphia, Melrose in London and many experimentalists in Sweden and the United States have devoted much time, energy and money to the development of safe perfusion of the whole body. In 1954, Lillehei and his colleagues in Minneapolis reported the first successful cure of Fallot's tetralogy using extracorporeal circulation with a pump oxygenator. This was taken up with great enthusiasm by vascular surgeons in the United States and, to a lesser extent, abroad. To the physicians the early results were disappointing. The original Lillehei-de Wall bubble oxygenator was unable to achieve adequate gas exchange at the rates of flow normally prevailing in anæsthetized adult subjects. Although it was more suitable for children, other difficulties occurred, and the results were not generally good enough, even in ventricular septal defect, for the operation to be regarded as anything more than a surgical *tour-de-force*. Nevertheless, it was undoubtedly a useful start and, as subsequent developments have shown, a step in the right direction. Improved pumps and more efficient gas exchangers combined with a better understanding of the principle of perfusion have made total cardiac bypass a routine procedure in some of the best clinics in the United States. In a few British and Continental hospitals, notably at the Hammersmith Hos-

[1] "Proceedings of Third World Congress of Cardiology", 1958, 3: 65.
[2] *Ibid.*, 1958, 3: 51.
[3] *Ibid.*, 1958, 2: 647.
[1] "Proceedings of Third World Congress of Cardiology", 1958, 3: 12.
[2] *Lancet*, 1957, 1: 1255.
[3] "Proceedings of Third World Congress of Cardiology", 1958, 3: 17.
[4] *New Engl. J. Med.*, 1952, 247: 455.

pital and the Carolinska Hospital in Stockholm, comparable results are now being achieved.

Success in this difficult field of surgery has depended on improvement of machines and experience in their management in the dog laboratory. For several decades now American surgeons, more than any others, have devoted much time to animal work. Lillehei's success after his training in the laboratories of his chief, Dr. Owen Wangensteen, is therefore not surprising. The lesson has not been lost on the other side of the Atlantic. In England and Europe strenuous efforts are being made by hospital and university administrators to provide the means to make up the leeway. In Australia open heart surgery has not yet been extensively practised. Using hypothermia, approximately 40 operations for simple atrial septal defect have been carried out in Sydney, 20 of them at the Royal Prince Alfred Hospital and 10 each at St. Vincent's Hospital and the Royal Alexandra Hospital for Children. With simple secundum defects without very large hearts the results have been excellent. When the patient is older, and the defect is large and complicated by pulmonary vascular lesions and cardiac failure, the results with hypothermia are less encouraging. It is in this group that deaths have occurred in Sydney. As F. Mills[1] has pointed out, repair in such cases and for the rarer ostium primum type of defect should be attempted only with cardiac bypass using an extracorporeal circulation. At the Royal Prince Alfred Hospital, in 13 of these cases, nine with an ostium primum, repair has been effected in this way with only two deaths, one a month after an apparently successful operation.

Extracorporeal circulation using a pump oxygenator is in clinical use only at the Alfred Hospital in Melbourne and at the Royal Prince Alfred Hospital in Sydney. Experience in the repair of ventricular septal defect, persistent atrio-ventricular canal and Fallot's tetralogy is therefore limited to these two hospitals. In both centres the physicians, when referring patients for surgical treatment, not unnaturally have tended to pick the most difficult cases with the worst prognosis apart from operation. The results have not been as good as with atrial septal defect, and in the two centres have been almost identical. A total of 27 patients suffering from ventricular septal defect has been treated with 10 deaths. This is far from satisfactory, but compares favourably with the initial American experience. The results will undoubtedly improve. It is quite obvious that operations on the ventricles present much greater difficulties than those in which only the atria are opened. J. W. Kirklin's[2] experience has demonstrated that death is usually due to inadequate perfusion. Once the technique has been mastered the mortality should fall below 10%. Fallot's tetralogy presents even greater problems, but here the prognosis in untreated cases is so poor and the life of the patient while he is alive so restricted that greater risks must be accepted in the hope of achieving a complete cure. In his first 100 cases, Blalock had a mortality of 17%, which is approximately the same figure as is now being obtained for total repair in the best American hospitals, according to F. H. Ellis and J. W. Kirklin.[3] In Australia experience with total repair of Fallot's tetralogy to date is negligible. The aortic valve, too, has its own peculiar difficulties, many of them at present apparently insurmountable. Differences of opinion in this field were much in evidence at the recent third World Congress of Cardiology in Brussels. Closed transventricular operation and a more direct attack using hypothermia or cardiac bypass all had their advocates. In Melbourne, in a small series at the Alfred Hospital, and more recently in Sydney, the fluothane-heparin technique has also proved useful. However, there is no doubt that the principal difficulty with the aortic valve is the pathology and not the technique of visualisation.

In any new and spectacular branch of surgery there is a tremendous temptation for the enthusiast to push ahead too fast. Extracorporeal circulation, unlike any other form of surgery, demands an adequate background of laboratory experience if it is to be safely practised. In addition, it needs a first class cardiological unit, well trained in clinical and diagnostic techniques, to support it. In Australia we have such units, but few surgeons have had the opportunity to follow their inclinations in dog laboratories. This work is extremely expensive, and at this stage it would be wise for those who are to finance our development to consider how many of these units are to be established. Clearly it is far preferable to have a few good units than many indifferent ones. A number of individual surgeons abroad are already working at the rate of 200 or more of these cases a year. Perhaps at the present time two units each in Sydney and Melbourne, adequately financed and fully deployed, could satisfy current demands. As the field expands and better techniques and machines are evolved, the need for additional centres will doubtless arise. Meanwhile work in the established units is progressing faster, and the time has come when general practitioners should realize the potentialities of the new surgical techniques. It has been general experience everywhere that patients with curable lesions are often not referred to competent cardiologists until late in their course. Although quite astonishing results have been achieved in this country in desperate cases, the results are obviously better if surgery is carried out when the heart is still in good condition. This requires, of course, that the surgical mortality be low enough to warrant intervention. This appears to have been achieved in atrial septal defect and pulmonary stenosis and is not far away in ventricular septal defect in this country. The list will undoubtedly increase.

[1] "Proceedings of the Cardiac Society of Australia and New Zealand, 1958."

[2] "Extra Corporeal Circulation", by J. W. Kirklin, D. C. McGoon, R. T. Patrick and R. A. Theye. Charles C. Thomas, Springfield, 1958.

Current Comment.

STEIN-LEVENTHAL SYNDROME.

THE facts of the Stein-Leventhal syndrome are now familiar to every student of gynæcology; nevertheless, a survey by one of the authors of this syndrome of his experience during the thirty years since his attention was first drawn to the condition is worthy of notice. In a recent paper[1] Irving J. Stein briefly reviews the results

[1] "Proceedings of Third World Congress of Cardiology", 1958, 3: 36.

[2] *New Engl. J. Med.*, 1958, 259: 420 (August 28).

obtained in the 96 women suffering from this condition on whom he has personally performed wedge resection of polycystic ovaries, and the lessons to be learned from this experience.

The syndrome consists of a history of secondary amenorrhœa and sterility, the bilateral finding of symmetrically enlarged ovaries, and the excretion of normal amounts of 17-ketosteroids and follicle-stimulating hormone in the urine. The ætiology is uncertain, but the condition is generally seen in patients aged between 15 and 30 years. In at least some cases, ovulation has occurred before its onset, and Stein has two patients in his series who had each borne one child before subsequent amenorrhœa called attention to the condition. It is now generally recognized that the condition is curable in the majority of cases by a wedge resection of the affected ovaries. It is an interesting point that this was first done purely for biopsy; the resulting cure was quite unexpected. Stein suggests that cure of the condition is due to decompression of the ovaries, and that simple incision of the capsule and puncture of the cysts would very likely lead to the same result. At operation he aims to remove a wedge of tissue sufficient for biopsy, to puncture the cysts from within the incision, and to reduce the ovary to normal size, so as to avoid diagnostic errors at any subsequent examination. He advises against doing a concurrent appendicectomy or suspension of the ovaries, owing to the risk of adhesions and, in the former case, of infection. Stein does not believe that endocrine therapy is of any help in the treatment of polycystic ovaries, and considers that, if used for a long period before surgery is attempted, it may even prejudice the result adversely. He emphasizes that to establish the diagnosis, the pelvic findings should be confirmed by one of the visual methods of diagnosis. Stein himself prefers "gynecography"—that is, contrast radiography by the insufflation of air into the peritoneal cavity; he condemns exploratory laparotomy when based upon a presumptive diagnosis only. Steroid-excretion tests are useful in the differential diagnosis, especially to distinguish this condition from the adreno-genital syndrome, in which the 17-ketosteroid excretion is raised.

Of the 96 patients on whom Stein has operated for this condition, 71 were followed up from the point of view of fertility (eight of the remainder were single, and others were excluded for various reasons). Of these 71 patients, 63 became pregnant one or more times. In Stein's series there were no ectopic pregnancies, no cases of carcinoma of the endometrium, and no recurrences of polycystic ovaries. In over 95% of his cases menses were restored after operation, and in nearly all of these normal, regular menses continued throughout the remainder of the patient's reproductive span, or up to the time of writing. In some cases laparotomy was performed for some other reason (Cæsarean section, myomectomy, etc.) some time after resection of the ovaries; in all these cases the ovaries were then normal in appearance, except for occasional, fine, fibrous adhesions.

COMMONWEATH MEDICAL ADVISORY BUREAU.

THE arrival of the "Summary of Regulations for Postgraduate Diplomas and of Courses of Instruction in Postgraduate Medicine", which is prepared each year by the Commonwealth Medical Advisory Bureau, is a reminder of the useful activities of that body, whose office in Tavistock Square should be a first port of call, especially for young medical graduates going overseas for the first time. The Bureau was established in 1948 by the Council of the British Medical Association for the purpose of welcoming and providing a personal advisory service for practitioners visiting the United Kingdom from other parts of the Commonwealth. In addition to providing detailed information on post-graduate education facilities, etc., the Bureau maintains a register of hotels and lodgings, and will be glad to help visitors looking for accommodation, even to the extent of making inquiries about houses and flats; arrangements can be made to enable visitors to meet prominent specialists, and private hospitality is offered through the Bureau by doctors willing to entertain visitors from overseas. General information is available about many other matters which concern the visitor, such as customs regulations, facilities for sport, travel, exhibitions, theatres, etc. In short, the Bureau is willing and able to help the visitor in a great variety of ways. It only asks intending visitors to give as long notice as possible, with information on points such as expected date of arrival, whether accompanied by wife and children, period of stay, objects of the visit and ways in which the Bureau can give assistance.

Copies of the "Summary of Regulations for Postgraduate Diplomas and Courses of Instruction in Postgraduate Medicine" have been sent by the Bureau to the several State Branches of the B.M.A., to the Deans of the Faculties of Medicine at the Universities, and to the Directors of Postgraduate Committees, so that they may be available for reference by interested doctors. Letters to the Bureau should be addressed to Dr. R. A. Pallister, Medical Director, Commonwealth Medical Advisory Bureau, B.M.A. House, Tavistock Square, London, W.C.1.

PLAGUE IN 1958.

AN interesting trend in the world picture of a major infectious disease is seen in the W.H.O. announcement that only 213 cases of plague were officially recorded in 1958. This is the lowest number since the beginning of the century. It provides further confirmation of the downward trend of plague incidence observed in recent years, especially since 1951, when 15,399 cases were reported (of which 8230 were in India). In 1957 the total was 569.

The distribution of the 213 cases in 1958 was as follows. In continental Africa, only six cases were reported in the north-eastern part of Belgian Congo and 19 in the Central Province of Kenya. In Madagascar 21 sporadic cases were recorded in several local areas. In America, active foci were located in Ecuador, in Peru and in a number of local areas of the State of Bahia in Brazil. In Asia (outside continental China and U.S.S.R.) a new focus (11 cases) was discovered in the Kurdistan-Miandoab area of Iran. The 26 cases reported in India were observed in three districts in the southern part of the country. All cases reported in Burma occurred in urban areas. Ten cases were reported in Viet-Nam.

CHOLERA IN 1958.

THE year 1958 was a bad year for cholera, according to a report recently issued in Geneva by the World Health Organization. The number of cases which occurred in Asia (93,000 is the provisional figure) was the highest recorded since 1953, when the disease struck 242,000 people. Epidemics occurred last year not only in India and Pakistan, but in Thailand and Nepal as well. The worst epidemic was in the lower Ganges valley, in East Pakistan, where 20% of all cholera cases for the year were reported. Several districts in India were also severely hit, and there were no fewer than 4895 cases, with 1765 deaths, in Calcutta alone. Other ports and cities with international airports reporting a high number of cases were Delhi (241 cases), Madras (208) and, in East Pakistan, Chalna (133). West Pakistan, which had been spared for the past ten years, had a cholera outbreak in four districts in November, but the number of cases is not yet known. For the first time since 1949 cholera struck in Thailand, with a total of 9396 cases, of which 6175 were recorded in Bangkok and its neighbourhood. There were also 1950 cases in Nepal, in and around Katmandu, where the epidemic lasted 14 weeks.

Abstracts from Medical Literature.

RADIOLOGY.

Radiographic Diagnosis of Traumatic Aneurysm of the Thoracic Aorta.

I. STEINBERG AND J. A. EVANS (*Amer. J. Roentgenol.*, August, 1958) state that acute traumatic aortic rupture associated with fractures, internal injuries and shock may be overlooked. Awareness of the role of stresses in deceleration following blunt trauma, however, should focus attention on the top of the aorta, just beyond the origin of the left subclavian artery, because that is the favourite site of rupture. This is explained by the physical forces which are concerned with deceleration acting with undue stress on the aorta, producing a tear just beyond the point of fixation by the brachiocephalic arteries and the insertion of the ligamentum arteriosum. Serial skiagrams of the chest for many weeks after injury permit recognition of mediastinal hæmatomata, hæmothorax and the development of a localized bulge (aneurysm) in the region of the aortic knob. Unless routine chest skiagrams are taken after thoracic injury, many years may elapse before a diagnosis is made in patients with chronic traumatic aneurysms of the thoracic aorta. Often, a mediastinal mass found in a routine chest skiagram of an asymptomatic patient may be the first indication of an aneurysm. In others, chest pain, cough, hoarseness or hæmoptysis may lead to X-ray study of the thorax and discovery of a mediastinal mass and aneurysm. Angiocardiography is invaluable in the diagnosis of aneurysms and readily differentiates them from mediastinal tumours. Finally, the characteristic location of traumatic aneurysms at the top of the aorta, the absence of positive serological findings for syphilis, and the history of trauma establish the diagnosis.

X-Ray Diagnosis of Acute Appendicitis.

C. SOTEROPOULOS AND J. H. GILMORE (*Radiology*, August, 1958) attempt an evaluation of the possible usefulness of the abdominal survey by means of plain X-ray films in cases of appendicitis presenting with atypical clinical features, particularly in the very young and in the aged, where every available diagnostic assistance is needed. A minimum survey study of the abdomen should include upright and right or left decubitus (usually left) views, or both, and a chest skiagram. The authors stress the diagnostic significance of an enterolith of the appendix. They believe that demonstration of an appendiceal stone in the presence of suggestive clinical findings almost always indicates a serious situation, such as a perforated or gangrenous appendix. A sign frequently observed is a fluid level in the caecum. It is demonstrated consistently only in the left decubitus view. The formation of fluid levels is due to extension of the inflammatory process into the caecum and terminal part of the ileum and the production of a degree of catarrhal typhlitis and ileitis. The fluid level is usually short. Occasionally it may be long and extend to the hepatic flexure. Frequently one or two small fluid levels are present in the terminal loops of the ileum. The authors state that when the fluid-level sign is properly demonstrated and other causes are excluded, it justifies a diagnosis of acute appendicitis even when the clinical findings are vague and inconclusive. The appearance of the caecum is frequently suggestive. It is almost always slightly or moderately distended, the haustrations are prominent due to local œdema, and mucosal markings are coarsened and prominent. Occasionally the cæcal wall appears thicker than normal. Changes similar to those in the caecum are present in the terminal loops of the ileum. The loops are frequently filled with fluid, and are demonstrable as a diffuse area of increased density when compared with the opposite side. In cases of perforated appendicitis with the formation of an acute abscess, the increase in density is more prominent and one may distinguish tiny irregular flecks of gas distributed within it. At this stage variable amounts of effusion fluid may be present in the peritoneum. The psoas-muscle sign consists of spasm of the right psoas muscle and indistinct delineation of its distal third. In early cases spasm alone occurs, from irritation, showing as a slight lateral bulging of the border. During the formation of an acute abscess, the distal third of the muscle shadow becomes obscured. As a result of spasm, a scoliosis of the lumbar spine is produced with the concavity toward the right. Peritoneal irritation causes slight to moderate distention of loops of small bowel, more commonly in the ileum, with thickened septa between them, and fluid levels are sometimes present.

Fulminating Ulcerative Colitis.

F. MCCONNELL, J. HANELIN AND L. L. ROBBINS (*Radiology*, November, 1958) discuss the diagnosis of fulminating ulcerative colitis by means of plain X-ray films. The morbid anatomical changes of distention and shortening of the colon, irregular thickening of the bowel wall, nodular mucosal elevation, and intervening thinning or ulceration, may produce on the plain X-ray film of the abdomen an appearance which is diagnostic of fulminating ulcerative colitis. In films taken in the supine position the colon is seen to contain an excess of gas, with the transverse portion usually showing most marked distension. Thickened inflamed mucosa forms irregular nodules which protrude into the air-filled lumen and cause the outline of the gas shadow to be irregular, nodular, or scalloped The nodular outline not only may be seen along the margin of the bowel, but may be a striking feature in the thickening of the semilunar folds when these have not been effaced by pre-existing chronic colitis. When seen *en face* the bowel wall has a mottled or cobblestone appearance, due apparently to contrast between inflamed thickened mucosal islands and the adjacent thinned and ulcerated regions. The extent and severity of these changes may vary from one portion of the bowel to another, and while this nodular appearance is usually best seen against the distended lumen of the transverse colon, not infrequently it can be outlined by air in other portions of the colon, particularly the sigmoid. Retained faecal matter, more commonly found in the caecum and ascending colon, may obscure changes in the bowel wall, but the left half of the colon usually contains only gas, thus permitting more positive recognition of inflammatory changes in the wall. As in chronic colitis, haustral sacculation may be entirely absent even in these markedly distended bowels. Thickening of the wall of the colon may also be demonstrated on plain films, seen as separation of the faint radiolucent line of pericolic fat from the gas-filled lumen. Often this is best seen along the lateral abdominal wall, but it may be visible along the transverse colon. Because of the potential hazard of perforation, the radiologist is reluctant to subject these patients to the trauma of a barium enema X-ray examination, but repeated plain X-ray films of the abdomen often make visible hitherto unseen changes in the wall itself, and very rarely fail to demonstrate some colonic abnormality.

The Differentiation of Metastatic Carcinoma from Multiple Myeloma.

H. G. JACOBSON *et alii* (*Amer. J. Roentgenol.*, November, 1958) state that not infrequently the radiologist has difficulty in distinguishing metastatic carcinoma from multiple myeloma. This problem may arise particularly in cases of predominantly lytic metastases from carcinoma of the breast. The authors have been impressed with the frequency of relatively early pedicle involvement in the lytic type of metastatic carcinoma, and conversely with the preservation of the pedicles in multiple myeloma until very late in the disease. The differential pedicular involvement in the two entities may be explained by the relative paucity of red marrow in the pedicles as compared with much of the rest of the vertebræ. Multiple myeloma is a disease of the marrow *in situ*, with destruction occurring locally and by contiguous extension and pressure. Thus the pedicles in this disease would be left relatively intact until very late. Conversely, metastatic carcinoma involving the skeleton, and particularly the spine, is caused by embolization of tumour cells. The reason for the early pedicle involvement in carcinomatous embolization remains obscure.

Neuroblastoma Originating from Olfactory Epithelium.

P. A. RIEMENSCHNEIDER AND J. T. PRIOR (*Amer. J. Roentgenol.*, November, 1958) state that recognition of the fact that neuroblastoma may occur as a primary tumour in the nasal cavity is important because of its unique characteristics. These include extreme radiosensitivity, characteristic of neuroblastomata generally, and a tendency to metastasize by extruding cells into the cerebro-spinal fluid, once it has invaded the cerebro-spinal pathways. The exact origin of these tumours is not completely understood, but in general it is accepted that they arise entirely independently of the central nervous system and probably within the olfactory mucous membrane. In contradistinction to neuroblastomata

in other areas, the majority of these tumours have been reported in adults. They present as a firm, reddened mass in the nasal cavity usually along the lateral wall. Some of them have been interpreted as being relatively benign, but they seem to spread rapidly and to invade the ethmoid cells and the orbit, causing a protuberance of the eye and partial or complete ophthalmoplegia.

Cardiac Failure and Gastric Ulcer in the Elderly.

M. M. KLEIN AND E. L. WALSH (*Radiology*, May, 1958) state that to the ætiological factors of gastric and duodenal ulcers there should be added cardiac decompensation of various degrees and secondary arteriosclerotic heart disease. In a study of 370 cardiac patients with gastro-intestinal complaints, 115 were found to have gastric ulcers. Since coronary heart disease is actually an arteriosclerotic condition, it is safe to say that arteriosclerosis is an important ætiological factor in the origin of the gastric ulcer. This point is important because the majority of gastric ulcers occur in persons of 50 years or older, which is also the age for arteriosclerosis. It was found that many patients, while in heart failure, show a degree of anæmia because of œdema of the mucosa and probably microscopic ulcers. If heart failure continues and passes into a chronic stage or recurs frequently, demonstrable ulcers develop.

RADIOTHERAPY.

Treatment of Bladder Cancer by Megavoltage Therapy.

J. SWINNERY (*Brit. J. Urol.*, September, 1957) reports the results of treatment by megavoltage therapy in 89 cases of carcinoma of the bladder. He states that megavoltage therapy has the following advantages over conventional 250 kv. X-ray apparatuses: (i) maximum dosage occurs in the subcutaneous fat rather than in the skin; (ii) little lateral diffusion takes place. Growths of the bladder were first treated by endoscopic resection when possible. If the growth recurred, or if it was considered too big for resection, or if it had infiltrated through the bladder wall, megavoltage therapy was instituted. Where necessary, this was followed by radical cysto-prostatectomy with node dissection. Usually a three-field technique was used. The dose delivered to the tumour was 6000*r* spread over five to six weeks. The tumour was accurately localized by cystoscopic and cystographic means. Occasionally markers were used to outline the growth, these being introduced endoscopically or by preliminary laparotomy. After such treatment, the tumour becomes avascular gradually and may not disappear until six months have elapsed. Skin erythema is slight. The hair may not fall out. Cystitis is minimal. Contracture of the bladder has not occurred. Inflammation of the rectum is less than with ordinary therapy. When cystectomy is carried out subsequently, minimal fibrosis of the pelvic cellular tissues is found. The growths were apparently destroyed in 32 cases, were unaffected in 37, and recurred after good initial response in 20; 40 patients died of their disease.

Cobalt Beam Therapy for Carcinoma of the Œsophagus.

J. S. LOTT AND I. SMITH (*Radiology*, September, 1958) report their experience using cobalt-60 therapy apparatus installed in 1951 in the London Clinic of the Ontario Cancer Foundation, with particular reference to the radical treatment of carcinoma of the œsophagus with the object of cure. They have found this method more efficacious in the treatment of this condition than conventional radiotherapy. Their series consists of 31 patients, of whom seven are alive and apparently free of morbidity for periods of one to five years after treatment. Fixed field therapy using from four to six separate fields was used in 27 of these cases. Rotation therapy was used in four cases. Tumour doses amounted to 6500*r* corrected for transmission through the lung and were applied over a period averaging from four to four and a half weeks. In this series the most serious complication associated with radical radiotherapy for carcinoma of the œsophagus was perforation and formation of a mediastinal fistula. The authors point out that both these complications can be a natural consequence of local deep invasion by the disease. The presence before treatment of persistent retrosternal or back pain is strongly suggestive of deep penetrating ulceration of the œsophagus, and is, in the authors' opinion, an indication for lowering the dosage to palliative levels.

SURGERY.

Acute Solitary Ulcer of the Caecum.

J. RABINOVITCH, P. RABINOVITCH AND R. LIPTON (*A.M.A. Arch. Surg.*, July, 1958) discuss five cases of acute caecal ulcer. In four, the principal type of inflammation was apparently due to a low-grade pyogenic infection, but in the fifth the ulcer was due to polyarteritis nodosa involving the caecal vessels. The outstanding clinical feature in these cases was the occurrence of signs and symptoms pointing to involvement of the appendix. The authors' choice of operative procedure was the resection of the entire segment of ulcerated bowel, including a few centimetres of adjoining normal-looking bowel.

Surgical Treatment for Chronic Gastritis.

E. S. JUDD AND C. C. EDWARDS (*A.M.A. Arch. Surg.*, June, 1958) discuss the results of surgical treatment for severe chronic gastritis as seen at the Mayo Clinic from 1946 to 1950. As a result of this study, they consider that severe chronic gastritis (either hypertrophic or atrophic) remains largely a medical problem, although they consider that the results with present medical management are not particularly good. Severe gastritis was the proved diagnosis in 51 patients subjected to surgical operation. In most of these cases operation had been performed because a more serious lesion was suspected clinically, but gastritis was proved by biopsy in every instance. Gastric resection was carried out in 32 cases in the hope that improvement might result. A seven-year follow-up study showed that 22 of the patients who had had resections performed were considerably improved. Mere gastrotomy with biopsy was less successful than resection, although medical management subsequently has kept some of these patients relatively comfortable and vagotomy appears to have helped in several cases. The authors consider that when a surgeon is confronted with a problem of severe gastritis, having already committed himself to laparotomy, in the light of present day morbidity and mortality possibilities he should consider gastric resection seriously.

Severe Bleeding from a Duodenal Ulcer.

J. C. WESTLAND, H. J. MOVIUS AND J. A. WEINBERG (*Surgery*, June, 1958) discuss the treatment of severe bleeding from a duodenal ulcer threatening the life of a patient. In a group of 24 patients they controlled the bleeding by duodenotomy, ligation of the bleeding vessel, pyloroplasty and abdominal vagotomy, the last being performed according to the method of Dragstedt. There were no fatalities in this group. Thus they consider that this operation is a simple effective method of dealing with an actively bleeding ulcer threatening the life of the patient.

Median Sternotomy for Open Cardiac Surgery.

F. GERBODE, M. V. BRAIMBRIDGE AND D. G. MELROSE (*A.M.A. Arch. Surg.*, May, 1958) have used a median sternotomy in a series of 30 patients to expose the heart and great vessels during repair of a variety of congenital defects, using total heart-lung by-pass. They state that exposure was excellent except for associated patent ductus arteriosus. Post-operative respiratory management was more satisfactory than with transverse thoracotomy. No wound complications occurred in any of the patients in this series.

Adenocarcinoma of the Appendix.

W. W. SLACK (*Brit. J. Surg.*, July, 1958) reports five new cases of adenocarcinoma of the appendix and discusses the differentiation of the condition from carcinoma of the caecum and from carcinoid tumour. In some cases the condition presents as one of acute appendicitis, and in these cases the presence of carcinoma may be revealed only by microscopy. It is suggested that right hemicolectomy is the correct treatment, even if this has to be done as a second operation. Three of these patients presented as cases of acute appendicitis; two of them died, one of acute peritonitis, the other from widespread abdominal metastases. In the other two patients a malignant tumour was suspected before operation, and both made a good recovery, one being alive and well five and a half years later.

Special Articles.

SIMPLE METHOD OF ARTIFICIAL RESPIRATION.

RECENT exhaustive investigations (see page 266, MED. J. AUST., August 23, 1958) have completely confirmed the superiority of mouth-to-mouth methods of resuscitation. The following are some practical suggestions to bring about an early and successful use of the method without some of its less pleasant features.

Apparatus.

The following equipment is needed:

1. Guedl's type moulded rubber or plastic airways, sizes 1 to 3, with the metal insert removed.

2. Standard medical pressure tubing of a size to fit the respective airways, each piece of tubing about 12 inches long, with a finger hole about one-third of an inch in diameter cut one to one and a half inches from one end of the tubing on the outer side of the curve. The other end is cut like a McGill's endotracheal tube, so that it can be used as an endotracheal tube for trachea toilet if circumstances and personnel permit.

3. A mouthpiece consisting of about three inches of slightly larger bore pressure tubing to fit snugly over the bevelled end. (This is desirable, since there may be a number of operators working on a patient, each using his own mouthpiece as he takes over.)

4. A small rubber balloon with the tip cut off, which may be used as a valve in the mouthpiece to prevent back flow of air, if desired; however, this is not essential.

5. A soft spring nose clip; or, alternatively, the nose may be compressed with the fingers.

The advantages of this equipment are its ready availability, its negligible cost, the ease with which it is carried in pocket or trunks, and its simplicity—there are no parts to go wrong.

The apparatus is assembled as shown in Figure I.

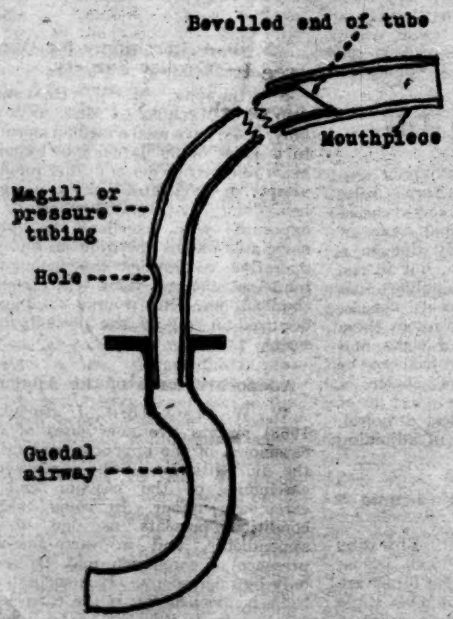

FIGURE I.

Method.

The method of resuscitation is as follows.

1. Remove the patient from the water as quickly as possible in a head-down position; there is only a limit of five minutes to restore adequate respiration if permanent brain damage or death is to be avoided.

2. If the patient is a child, hold him in the fully head-down position or jack-knifed across a knee with the head down, and administer several smart slaps on both sides of the back of the chest to dislodge water and debris from the mouth and lungs; this is important. If the patient is older, this may need to be done on a steep incline with the head down, or the patient may be supported head down by an assistant.

3. Place the patient on his back on a slight incline with the head down. The operator then kneels on the ground facing the patient's head.

4. Clear the patient's airway further by lifting forward the jaw with the thumb in the mouth and the fingers on the outside of the jaw, and with the fingers of the other hand, sweep around the back of the throat and tongue and remove any obstructive material.

5. Insert the airway of the appropriate size, number 1 for a child, number 2 for a woman or small man, and number 3 for a larger man, the tubes having been attached previously as shown in Figure I. This is best done by lifting the jaw and tongue forward and sliding in the airway down the tongue to its full length, so that the rubber flange comes to rest firmly on the lips forming a relatively air-tight seal. The head is then turned slightly to the left and supported in the fingers and palm of the left hand; the left index finger is left free to block and unblock the hole in the breathing tube.

6. Place the spring clip on the nostrils, or hold these with the other hand.

7. Gently but firmly inflate the patient's lungs as follows: (i) With the forefinger of the left hand over the hole in the front of the tube, the operator inflates the patient's lungs with his breath. If this manœuvre is successful, the chest and upper part of the abdomen are seen to rise slightly. (Under certain circumstances air may enter the stomach; if so, moderate pressure must be applied just below the ribs in the mid-line, to avoid this.) (ii) Keeping the tongue over the top of the mouthpiece, the operator releases the finger over the hole in the tube; this should result in an emptying of the patient's lungs due to an elastic recoil. Froth, if any, can also come out this way without contaminating the rescuer's mouthpiece. (iii) At the same time, the operator takes a deep breath through the nostrils or side of the mouth ready for the next inflation. (iv) The operator maintains inflation at a rate of 10 to 15 per minute. This should be quite adequate. Anything faster will be too exhausting and, at the same time, quite unnecessary. A change in operators may take place when necessary, each operator using his own mouthpiece. Inflation must be continued without interruption during the transport of the patient, when this is considered necessary.

8. Meanwhile, other operators will cover the patient's body with a blanket, but in such a way as not to obscure the adequacy of ventilation. Firm massage of the limbs towards the body may be maintained to improve the return circulation of blood to the heart.

If there is strong resistance to inflation: (i) see that the patient's airway is clear as far as the vocal cords; (ii) see that the rubber airway is properly inserted and that the tube is not kinked. If these two sources of trouble are not involved, the obstruction must be within the trachea. This being so, and if a laryngoscope, sucker and trained operator are available, the pharynx should be sucked out and McGill's tube inserted, then catheter suction of the trachea performed and inflation resumed without delay.

When the patient shows signs of active resistance, a rubber airway is left in position until it is expelled by the patient.

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Congresses.

SECOND AUSTRALASIAN CONFERENCE ON RADIATION BIOLOGY.

THE second Australasian Conference on Radiation Biology was held at the University of Melbourne from December 15 to 18, 1958. Some 150 scientists attended the Conference. Guest speakers were Dr. L. H. Gray, Director of the British

Empire Cancer Campaign Radiobiological Research Unit, Mount Vernon Hospital, London, and Dr. J. F. Loutit, Director of the Medical Research Council Radiation Biology Research Unit at the Atomic Energy Research Establishment, Harwell. This account has been prepared by Dr. J. H. Martin.

The Conference was designed to allow the presentation of current work on the interaction of radiation with materials of all kinds. It can be said that radiation biology has now two main divisions, the first concerned with the mechanisms of the process and the various links in the chain reaction, and the second with change in behaviour brought about from this. The former requires a study of a wide variety of living and non-living material, reactions of which may appear far from practical application. The second is closely related to, and has developed mainly under the stimulus of, the medical applications of radiation.

Papers by Dr. L. H. Gray, and by Mr. H. A. S. van den Brenk of the Cancer Institute, Melbourne, dealt on the one hand with experimental work concerned with increasing the sensitivity of tumour tissue by working at high pressures of oxygen, and on the other hand with protecting material from radiation effects by the use of protective substances. The influence of oxygen on radiosensitivity has been determined for a wide range of effects, such as death of animals from whole body exposure, effects on various organs of animals, damage in things like *Drosophila* and bean roots, as measured by growth, survival and chromosome structural damage, and so on. There is great interest in this work, and its application in the clinical use of radiation is being followed. Treatment of patients in a high pressure oxygen atmosphere has been started on an experimental basis by a group at St. Thomas's Hospital in London. It is easy to reason that a tumour lacking blood supply will also lack oxygen, and that, therefore, the increase in oxygen pressure will improve the situation as regards the effect of radiation on the tumour more than on the healthy tissue, already well supplied with oxygen. This simple picture, as Dr. Gray pointed out, is complicated by a lack of understanding of just how the effect is produced.

Mr. van den Brenk also gave some striking demonstrations of the way in which chemicals could protect animals from radiation effects. The protective effect is considered to result from the injected substances competing with the biological system for the damaging products of radiation. Thus protection in this way is achieved only if the injection is given before irradiation. Much interest in recent years has been shown in means of recovery after irradiation. The most fruitful line of investigation here has been grafting, particularly of bone marrow. In the early stages it was thought that the bone marrow injected must contain a humoral agent which caused an accelerated recovery of the irradiated animal's own hæmatopoietic tissue. Much evidence, however, has now accumulated which shows that the massive dose of X rays, normally of the order of the lethal dose, destroys the animal's capacity to reject foreign cells, and these flourish and permit recovery of the animal's own tissues. Evidence from Loutit's laboratory indicated that not only the bone marrow of the irradiated animal was recolonized by the injected cells, but the lymphoid tissues as well. Given that the recovery was due to the recolonization of the host's depopulated hæmatopoietic tissues with cells from a normal donor, it was obvious that here was a potential treatment for leukæmia in the animal.

The desire, of course, is to apply the method to the human subject, and two groups reported work on a larger animal, the rabbit. One group in New South Wales had made use of radioactive colloidal gold to irradiate selectively the bone marrow. It was found by experiment that the colloid was deposited in such a way as to do this effectively. The group thus avoided delivering whole body doses of the order of the lethal dose to the animal, but managed to produce high levels of radiation in the bone marrow itself. Mr. J. W. Kent, of the Department of Surgery, University of Melbourne, reported work on skin grafts on rabbits. With increasing X-ray dosage up to the lethal dose for the rabbit, lengthening of the homograft survival was apparent, and it is possible that with the selective irradiation technique of the New South Wales group, higher dosage levels could be used with consequent improvement in the survival time of the graft. Dr. P. Ilbery reported exploratory work in heterografting in the mouse in which spleen cells from donors less than twelve hours old were used in the hope of avoiding the incidence of secondary radiation disease, which usually occurs some months after the irradiation. Some success was achieved.

Experiments reported by Dr. G. J. Nossal and Miss Larkin from the Walter and Eliza Hall Institute of Medical Research in Melbourne were designed to test a hypothesis put forward by Burnet. Analysis of the extensive work on isologous, homologous and heterologous marrow transplants led to the suggestion that antibody-producing cells could replicate functionally for an indefinite period in a series of embryonic host spleens. That led Burnet to postulate that the information necessary for the production of any conceivable antibody globulin resided in a normal unstimulated animal. The information existed in the form of clones of mesenchymal cells, each of which was designed to form one type of patterned globulin or antibody. From the experimental work it is apparent that the production of antibodies can take place only in adult animals or in an environment packed with adult cells; while, conversely, immature cells make antibody when transferred to an adult environment. While no experimental proof of the Burnet hypothesis emerged, it did appear that a cellular immunological memory existed.

Various aspects of radiation hazards formed an interesting group of papers. Much has been deduced about the incidence of leukæmia in man from the investigations after the atomic explosions in Japan, the work of Court-Brown and Doll on subjects of ankylosing spondylitis, investigation of leukæmia in American radiologists and a few other examples, and Loutit pointed out that the analysis of Lewis assumed a linear relationship between the incidence of leukæmia and the integrated dose of radiation, irrespective of dosage rate. This presumed a situation analogous to that which is supposed to hold for gene mutation—that, in fact, production of leukæmia is due to a somatic mutation. Loutit went on to report some work in his own laboratory which showed that there was no evidence to support the hypothesis that the chief determinate of the incidence of radiation-induced leukæmia was dose, and that there was some evidence which denied the validity of the extrapolation from existing human data on the relationship between dose and leukæmia to situations where the dose rate was very low. Such deductions, however, are valid only for leukæmia incidences of higher than 10%. It is unlikely that experimental work will be available to establish results for incidences of lower than this, which are still of significance in a population, and it is also possible that a linear relationship exists in this region.

A paper by Dr. J. H. Martin and Miss G. Muller from the Cancer Institute in Melbourne reported estimates of the bone marrow dose received from diagnostic X-ray procedures. Studies of the quality of the radiation inside the body led to the conclusion that quite marked changes in the factors used in diagnostic X-ray exposures did not greatly change the bone marrow dose.

Work reported by Dr. A. S. Fraser on radiation effects on the mouse fœtus showed that the effect of X rays on development was not correlated with the size of structure. This led to the conclusion that radiation produced a condition of general stress affecting the development of both major and minor structures.

A report from the Australian Atomic Weapons Test Safety Committee showed that levels of radioactive fall-out in Australia were extremely low. In general, the figures for strontium 90 uptake in bones which had been analysed were substantially lower than those from other parts of the world, and the distribution of strontium fall-out as assessed from bone samples was such as to show that the main contribution was from explosions carried out outside Australia. Mrs. Winkler, from the Cancer Institute in Melbourne, reported studies measuring radioactive fall-out in the Melbourne area. In general these confirmed the work of the Atomic Weapons Safety Committee, but showed that no one detection method by itself gave complete measurement of fall-out.

In the early days of introduction of radioactive isotopes the tendency was to design laboratories for the worst conceivable conditions. This led to unduly expensive procedures, and an analysis presented by Dr. A. R. W. Wilson, of the Australian Atomic Energy Commission, examined the requirements, in relation to the maximum permissible exposures laid down by international bodies, of laboratories carrying out certain procedures. While the figures obtained can be used only as a guide and will in fact vary between different establishments, the approach to their determination is rational and useful.

While in the early days much significance was attached to it as a sign of exposure to radiation, the examination of the blood picture is now considered of less value, particularly at low levels of exposure. Dr. D. O. Shiels claims, and submitted further information in support of these claims, that he has indices which show the effect of radiation exposure at much lower levels than were hitherto thought possible.

An admirable survey presented by Dr. Loutit of the work of a number of groups in the United Kingdom was concerned with the uptake of radioactive fission products in the human food chain. The beautiful and extensive work carried out in the United Kingdom highlighted the many factors which enter into the situation, such as the depth of rotting of the plant, the contamination through leakage or through the soil, the effect of rainfall, the effect of cultivation, the effects of the calcium content and general quality of the soil, and so on. These factors introduce wide variations in the resultant content in, say, sheep bones or milk. Loutit followed this by a report from workers in his group on "Strontium in Man and Beast". The wide variations between soils in different parts of the world and their cultivation make it difficult to draw conclusions for Australia, but on the whole the situation appears reassuring as far as hazards from radioactive fall-out are concerned. In particular, perhaps, the indications from some work of Loutit's group are that the turnover of strontium in man is considerably faster than the pessimistic value of ten years, which was adopted by the International Commission on Radiological Protection, as the biological half-life.

In a paper by Dr. D. Metcalf, of the Walter and Eliza Hall Institute, Melbourne, it was suggested that the thymus might play a major role in the indirect process associated with the induction of leukæmia. Dr. Metcalf has shown that the thymus produces a lymphocytosis-stimulating factor, and that in lymphoid leukæmia, both in humans and mice, excessive levels of this factor are present; this may be related to the induction of neoplasia.

An interesting study of recovery mechanisms and injury following both neutron and gamma radiation was reported by Dr. H. Vogel, of the Argonne National Laboratory, U.S.A. Animals were exposed to dose levels which would kill between 80% and 90% of them within 30 days. Some reduction in mortality in the early stages of irradiation was obtained by the use of the antibiotic streptomycin and some protection also, at later stages, by the injection of bone marrow cells. Combination of these two, however, produced dramatic protection, reducing the mortality to about 12%. If, further, the protective agent cysteine was injected into the mice before irradiation, and the antibiotic and bone marrow techniques were used, mortality was reduced to about 6%.

A group from the Royal North Shore Hospital in Sydney are using the thyroidal iodide clearance rate as a parameter in guiding the therapy of thyrotoxicosis. Results lead to the hope that the work may enable the programme of therapy in any patient to be advanced by at least one month. Further, the dose required may be smaller, and with this comes the possibility of reducing the radiation to which the patient is exposed at a general exposure.

Dr. Irwin I. Oster, of Indiana University, U.S.A., in discussing the spectrum of sensitivity of *Drosophila* germ-cell stages to X irradiation, showed that, by development of more refined techniques, it was possible to determine the order of decreasing sensitivity of the different stages of male and female germ cells.

Mr. W. D. Jackson, of the University of Tasmania, has been studying the life span of mutagens produced in cells by irradiation, and concluded in his paper that oxygen appeared to be a most important factor in the process of aging and that chromosome breakage increased exponentially with the storage time in air. It was possible by various combinations of pre-irradiation and post-irradiation storage in various gases to partition the effects into a direct irradiation component, a direct oxygen component, an oxygen-irradiation component and an oxygen-irradiation post-storage component. It was concluded that the interaction components accounted for more than two-thirds of the damage.

A group of papers was concerned with physical and chemical effects, and in a study of the interactions induced in solids by fast particle irradiation, Dr. P. G. Klemens, of the C.S.I.R.O., Division of Physics, Sydney, told of the nature of the damage, referring particularly to the way in which displacements were clustered, heat was liberated and recovery from the damage took place.

Mr. K. H. Napier and Dr. J. H. Green, of the Department of Radiochemistry, University of New South Wales, have been studying the effects of ionizing radiation on simple organic compounds so that the effects of more complex compounds could be inferred. Their investigation covered both the primary and secondary effects of radiation, and they gave examples of work in both spheres. Because the final products were determined by the way in which various molecular fragments subsequently behaved, their main aim was to find the primary molecular fragments; by use of radical scavengers they found that they could determine the radicals present during the radiolysis. This group had also studied the radiosynthesis of chemical compounds, which are now engaging the serious attention of scientists for two main reasons. First, it is likely that the commercial production of certain classes of compounds by radiation synthesis will be economically feasible; secondly, and most interestingly, the synthesis of primitive forms of life has recently become more than a remote possibility. Examples in both categories were given, and an account was also reported of an experimental study of radiation synthesis of urea in the liquid phase.

Mr. R. Tirrell's group at the School of Biological Sciences, University of New South Wales, has been conducting an investigation into the effects of radiation on the synthesis of porphyrins by the erythrocytes of the domestic fowl. Mr. Tirrell reported on part of this investigation concerned with the effect of beta radiation on porphyrin compounds in aqueous solutions. His first concern was the effect of beta radiation on protoporphyrin, when dissolved in plasma from fowl's blood. It was shown that this protoporphyrin when irradiated with beta rays made a rapid conversion to another substance; this substance, once formed, was not itself affected by radiation. The substance formed was a porphyrin, and reasons were advanced for believing it to be an oxyporphryrin.

Proceedings of the Conference are to be published.

PAN-PACIFIC SURGICAL ASSOCIATION: EIGHTH CONGRESS.

THE eighth congress of the Pan-Pacific Surgical Association will be held in Honolulu, Hawaii, from September 28 to October 5, 1960. All members of the medical profession are cordially invited to attend, and are urged to make arrangements as soon as possible if they wish to be assured of adequate facilities. An outstanding scientific programme by leading surgeons promises to be of interest to all doctors. Nine surgical specialty sections are held simultaneously.

Further information and brochures may be obtained by writing to Dr. F. J. Pinkerton, Director-General of the Pan-Pacific Surgical Association, Suite 230, Alexander Young Building, Honolulu 13, Hawaii.

Correspondence.

DIAGNOSTIC RADIOLOGY AND PEN-KNIVES.

SIR: Dr. Mary Thornton's admirable protest against the radiological supermarkets created by that recurrent miracle, Conrad Röntgen's ray (MED. J. AUST., November 15, 1958), is combined with a plea for increased government curbing of individual liberty—i.e., she is of the same opinion still about the registration of radiologists.

May I regretfully draw her attention to the difference between (a) registration of fact—e.g., birth, death, marriage, ownership of an aeroplane, a wireless set or a dog—and (b) registration of qualification? Registration of qualification allows Dr. Thornton or me to do a cisternal puncture on a man (whether we have had previous experience of it or not), but makes it illegal for us to give a dog a distemper injection (we are neither of us registered veterinarians). Registration of qualification is merely a stumbling block in the path of progress, a time-binding device and an evil legal fiction. Vitality, intelligence, character, training and a sense of vocation cannot be decided once for all by examination and fixed by registration. A few years ago, when my English setter pup needed immunization against distemper, I knew it was illegal for me to give the animal the injection. Of the four registered veterinarians within a hundred miles of me at the time, one was pregnant, two were senile, and the other, a recent graduate, pleaded with me to show him how to give the injection. I had seen dogs die of distemper, so I broke the law for his instruction and the dog's survival.

For that sort of reason applied to men and women, I am opposed to the time-binding device of registration for alleged qualifications. Dr. Thornton and I were alive when Miss Florence Nightingale, O.M., died—not Miss Florence

Nightingale, registered nurse (e.g., as our younger colleagues who might watch T.V. might suppose). For fifty years she bitterly and ably opposed the registration of nurses, realizing that official channelling of the right to serve mankind is, of its essence, evil.

Per contra, has Dr. Thornton considered the need for registration of pen-knife users? There have been tens of thousands of deaths from the uses of this "lethal weapon" on someone who could not "hit back". (Cf. my report, with illustrations, of the murder of a young man by his father in this manner—MED. J. AUST., May 14, 1938, page 856.)

Down with bureaucracy!

Yours, etc.,

607 New South Head Road, Rose Bay, New South Wales.
January 20, 1959.

GODFREY HARRIS.

THE FUTURE OF THE AUSTRALIAN ABORIGINAL.

SIR: Further to my letter published in THE MEDICAL JOURNAL OF AUSTRALIA on January 3, 1959, regarding the future of the Australian aboriginal. I forwarded a copy of Dr. Barrack's article to Mr. D. McLeod, who initiated the aboriginal cooperative near Port Hedland in Western Australia. Mr. McLeod has successfully worked with the aborigines in this area for some time, and I feel that his comments would be valuable to those interested in this problem. His comments are as follows:

> Dr. Barrack says that the aborigine should be protected from exploitation and then goes on to imply that the squatters are the ideal employers. He ignores the fact that it is largely the squatter (with the missionary near by to excuse him) that has destroyed the blackfellow by usurping his land, by underfeeding him and overworking him. Most people can never imagine the blackfellows as independent and self employed workers. They can only imagine them as being employed by the whites, as subservient to them and above all as a source of profit for them. This business of handling them with kindness, firmness and fairness is patronizing in the extreme; and implies that it is necessary to "keep them in their places"—an inferior place.
>
> How would the Doctor react if his future was discussed in terms similar to that he has used in connection with the blackfellows?

In the same letter Mr. D. McLeod mentions the fact that adult tribal natives from the "desert" have come into the cooperative (Pindan Pty. Ltd.), and within a few weeks have become integrated, industrious members of the community.

Yours, etc.,

366 Church Street, Richmond, E.1, Victoria.
January 22, 1959.

BARRY E. CHRISTOPHERS.

TOXICITY OF ATROPINE EYE DROPS.

SIR: With regard to the recent article in the *British Medical Journal* (December 6, 1958) by Dr. Baker and Dr. Farley regarding the toxicity of atropine eye drops causing psychoses, I would like to relate a recent experience.

Recently in Kalgoorlie, I prescribed atropine sulphate drops 1% t.i.d. for three days in a six-year-old boy for refractive purposes.

The mother was very puzzled on bringing the child to my surgery and complained that the child had had nightmares and had what appeared to be hallucinations, and generally kept the whole household in a state of uproar for one and a half days. The child had a dry tongue, flushed face and well-dilated pupils when I saw him, and was very restless on retinoscopy. As this is the second case I have seen in Western Australia in three months, I wonder if the warm season accentuates the symptoms, as the temperature at Kalgoorlie was 106° for nearly three days (diurnal only) at the time of this report.

I intend to use 0·5% atropine sulphate eye drops in future in dealing with small children under seven years of age.

It is interesting to recall that in the colder countries of Europe I can recall the same trouble in old people using hyoscine hydrobromide eye drops 1%. This condition was ameliorated by changing to 0·5% hyoscine hydrobromide.

Yours, etc.,

"Martalup", 254 St. George's Terrace, Perth, Western Australia.
January 21, 1959.

P. J. DALY.

MEDICAL TECHNOLOGY CONVENTION.

SIR: In THE MEDICAL JOURNAL OF AUSTRALIA of December 13, 1958, there appears in the column "Notes and News" a paragraph regarding the Medical Technology Convention organized by the Australasian Institute of Medical Laboratory Technology, and held in Sydney on December 15 to 19, 1958. This convention brings under review present-day confusion of ideas concerning the role and status of the varied personnel employed in pathology laboratories.

It is not uncommon at the present time for the term pathologist to be used quite incorrectly. Pathology, as applied to man, is a branch of medicine, and as such should be practised only by a legally qualified medical practitioner who has specialist qualifications in the field. In spite of this, it is not rare for laboratory technicians to be referred to as pathologists, not only by the lay public, but also by hospital administrators, medical practitioners and nurses. I have also heard applicants for a position as laboratory assistant say that they expected to become pathologists by entering the ranks of laboratory assistants.

Until recently there was a Society of Laboratory Technicians of Australasia whose members were known as technicians. This society has now become the Australasian Institute of Medical Laboratory Technology, and its members style themselves medical technologists. These people have no qualifications in medicine, nor sufficient training in science of any sort to be in a position to use science in the development of technical methods. Thus the term is a misnomer on both counts, and the "medical technologist" is none other than the formerly less pretentious technician.

Many university graduates in science find a vocation in pathology laboratories, either in routine work, or in research projects in such fields as microbiology or biochemistry in relation to medicine, and while they may be well equipped in the scientific field of their choosing, one should not lose sight of the fact that they are untrained in medicine and are unqualified to assume the role of medical doctor (in particular pathologist).

A notable danger of this confusion of terminology and ideas is that it may be thought that if a hospital employs a "medical technologist" it has a pathology department. Nothing could be further from the truth. If a district is not large enough to support a pathologist (as it may not support a physician, ophthalmologist or dermatologist), the obvious solution of the problem of a pathology service is to organize a transport system of specimens to the nearest pathology laboratory under proper supervision. By this method results may be available quite expeditiously. It is true that under this system the hospital does not have the benefit of bedside consultation by a pathologist; but it does not have this advantage if it employs a "medical technologist", and, by contrast, the results originating in a supervised laboratory are of some value and possibly cost the hospital considerably less.

One can easily imagine the cry "What would we do if there was an urgent C.S.F.?"; but one could not imagine the same anguish of expression if the query were altered to "What would we do if we got an ectopic?". If circumstances do not permit the transfer of the patient to a gynæcologist, the local practitioner brings the gynæcologist to the patient or deals with the situation himself. He does not expect a theatre attendant to perform the operation for him. I submit that it would be dereliction of duty on the part of the practitioner if he did not count the cells in this hypothetical cerebro-spinal fluid himself, and did not examine the Gram smear under the microscope, and did not make a culture for transmission to a bacteriological laboratory. I presume the hospital would provide bench space and microscope whether the medical practitioner or a "medical technologist" viewed the smear.

Reverting to the Medical Technology Convention, I quote from page 5 of the brochure:

Monday, 15th December: 10 a.m. Exhibition open for inspection by Medical Technologists, Pathologists, Medical Superintendents, Hospitals Commission and other allied personnel. Tuesday, 16th December: 10 a.m. Exhibition open to the public. Other allied medical organizations invited to inspect the exhibition throughout the day (e.g., Radiographers, Optometrists, Physiotherapists, General Practitioners, Nurses etc.).

It is interesting to muse on the miscellaneous groupings of pathologists and Hospitals Commission or the public and general practitioners, and to wonder which category it was hoped to impress the most profoundly.

At a time when bedside consultation with the clinical pathologist is becoming more important in modern medicine, it is indeed notable that people untrained in medicine should be confused with pathologists and should assume the adjective "medical".

Yours, etc.,

J. R. S. DOUGLAS,
Director of Pathology.

The Royal Newcastle Hospital,
Newcastle,
N.S.W.
January 28, 1959.

A NOTE ON HERPES ZOSTER AND VARICELLA.

SIR: I was interested in Dr. J. Watson's note in THE MEDICAL JOURNAL OF AUSTRALIA, January 10, 1959.

Some 48 years ago I was appointed medical officer to the Pacific Phosphate Company at Ocean Island, Central Pacific. Shortly after my arrival there, the resident dispenser, an elderly London gentleman, came to me and said that he had instructed the hospital orderlies to get all the beds prepared for an epidemic that was imminent. I asked him what epidemic did he forecast, and he replied, "chickenpox", "Whatever makes you think so?" He said that he saw three cases of shingles that morning at the dispensary.

I looked up medical text-books at that time (1911), but could find no reference to any association between varicella and herpes zoster, hence I was very sceptical of the dispenser's prediction.

Within a fortnight the hospital was packed with cases of chickenpox of a serious type. The patients ran high fevers for weeks, and many were permanently pitted. However, I never saw a patient suffering from chickenpox and shingles at the same time, hence I think Dr. Watson's case was, as he stated, a *rara avis*. Epidemics of chickenpox amongst the Polynesian races were serious, and usually preceded by sporadic cases of herpes zoster.

Yours, etc.,

F. J GRAHAM.

43 Watkin Street,
Rockdale,
N.S.W.
February 9, 1959.

THE JACKSON LECTURE: PROGRESS IN PSYCHIATRY.

SIR: I would like to congratulate Dr. Liebhold (MED. J. AUST., January 17, 1959) on having read at least part of Ernest Jones's monumental "Sigmund Freud: Life and Work", which should, in my opinion, be read *in toto* by all wishing to understand something of psycho-analysis and its founder. However, Dr. Liebhold is, it seems, in error in his criticism of Dr. Murphy's description of Freud as "an intelligent imaginative neurotic Jew".

Ernest Jones, one of Freud's very few long-standing personal friends, himself states ("Sigmund Freud: Life and Work", Volume I, page 334): "However unpalatable the idea may be to hero worshippers, the truth has to be stated that Freud did not always possess the serenity and inner sureness so characteristic of him in the years when he was well known. The point has to be put more forcibly. There is ample evidence that for 10 years or so—roughly comprising the nineties—he suffered from a very considerable psychoneurosis." Evidence for this is to be found in plenty, as Dr. Murphy undoubtedly knows. There were "extreme changes of mood", "dread of dying", "anxiety about travelling by train" and well-marked hypochondriasis.

One may also mention Freud's addiction to cigars (20 a day), his difficulty in making and keeping friends and disciples, and his deep buried hostility to his father and to the father-substitutes including Breuer and Fliess, the numerologist, with whom he was on intimate terms for ten years, sharing the mystic significance of the numbers 23 and 28. This friendship was broken by Fliess, following a meeting when he stated that Freud "read his own thoughts into his patients", and had adopted Fliess's views regarding bisexuality. As Freud himself stated: "There is some piece of unruly homosexual feeling at the root of the matter" (page 348).

We may wonder how far all these difficulties were removed by his self-analysis, and his discovery that the memories of incest given him by many of his patients were phantasies of the patients dating from infancy, and that his inference that the neuroses of his brother and several sisters were due to his own father's perverse activities was also due to phantasy.

We may also wonder how far the neurosis was replaced by paranoid psychosis with "serenity and inner sureness", and delusional formation regarding infantile sexuality and the Œdipus complex as universal characteristics of mankind, rather than the outcome of his own peculiar background.

We may even wonder how far his apparent improvement in mental health was due to his appointment as assistant professor, and increasing recognition and success.

At least we must surely all agree that Freud was far from being an ordinary person, even though he shared with us many of the frailties we find within our patients and ourselves, and must share Dr. Liebhold's admiration for the way Freud stood up to the strain of his malignancy and numerous operations.

Yours, etc.,

JOHN F. WILLIAMS.

12 Collins Street,
Melbourne,
January 30, 1959.

PSORIASIS: A PHYSICIAN'S EVALUATION.

SIR: Dr. E. Susman, in his paper "Psoriasis: A Physician's Evaluation" (MED. J. AUST., January 10, 1959), has perpetuated the misconception that psoriasis does not respond readily to treatment.

Psoriasis is frequently labelled by physician and patients as an incurable disease. I believe this is due to the fact that any disorder visible to the eye which clears and subsequently recurs is associated with the original condition, whereas subjective diseases—for example, headaches, digestive disorders and rheumatic pains, etc.—are not so readily connected with previous episodes.

Regarding the criticism of the failure of dermatologists to elucidate the pathogenesis of psoriasis, one may well reply: "Has any greater advance been made in the above-mentioned conditions?"

In my opinion the description of psoriasis as an ectodermal disorder is misleading, as I believe it to be a mesenchymal disease, and that in the future some connexion with other diseases of the mesenchyme may be established.

The patient's mental reaction to his disease is of the greatest importance, and thus the physician's undeserved labelling of psoriasis as "incurable" may render therapy difficult.

Yours, etc.,

W. H. WARD.

17 Bolton Street,
Newcastle,
N.S.W.
February 2, 1959.

THE COMPENSATION OF INDUSTRIAL INJURIES.

SIR: I feel that some statements in Dr. Michael Kelly's letter (MED. J. AUST., January 17, 1959, page 91) can scarcely go without comment. He mentions—in reference to backache, I presume—that the tendency of doctors is to blame their patients for not getting well. This may be so; but my interpretation of such attitude is that medical men tend towards blaming their patients when they—the doctors—do not understand the pathological condition and therefore can do little about it. Backache, apart from the simple muscular strains and a few disk or other conditions requiring surgical

intervention, is a very complex condition indeed, and more so when the sufferer is a compensation case.

Dr. Kelly further states that the present fashion of treating these patients as psychiatric or as malingerers is disastrous. With the second part of this sentence I agree; with the first part I disagree most emphatically—with exceptions, of course, in each category, and also depending upon what he means by "psychiatric". Here, one has to be very careful indeed to define one's terms. Backache, sooner or later, in chronic cases becomes psychosomatic. Thomas Sydenham, 200 years ago, had the same idea, and he has not been alone by any means. I can refer Dr. Kelly to a paper of mine, "Psycho-Physical Aspects of Backache" (MED. J. AUST., May 26, 1951, page 763), which lightly touches upon this subject. With a few exceptions the treatment of backache in all countries is regarded as a mechanical matter, with little appreciation of the psychosomatic factors.

Conscious malingerers are, in my experience, fairly rare; unconscious malingerers exceedingly frequent, especially in compensation cases. This, however, is another difficult psychological mechanism, and is, I fear, to their own disadvantage, very often complicated by the attitude of insurance companies.

As for the husband who became unsympathetic towards his wife after a psychiatrist had "explained" the good lady's "neurotic" backache, all I can surmise is, firstly, that the psychiatrist explained it in unsuitable terms, possibly to a prejudiced—as all such patients are—or uncomprehending audience, or secondly, and more likely, that the husband was already covertly hostile towards his wife, and used any stick to beat a dog.

Anyway, the word "neurotic" should not be used loosely. We are all more or less neurotic, but scarcely any layman and very, very few medical men have any real understanding of the implications of the term.

Yours, etc.,

235 Macquarie Street, Sydney,
February 4, 1959.

E. HASLETT FRAZER.

VACANCIES IN INDONESIA.

SIR: May I be permitted to draw the attention of your readers to the desperate medical situation in Indonesia? Even before last year's exodus of many European doctors, there was an average of only one doctor to 60,000 people.

Exigencies of work in these islands at present may demand the postponement of financial security, and even the sacrifice of academic standards. Administrative frustrations add to the difficulties. But for young graduates there are the rewards of unlimiting experience, and the satisfaction of showing tangible friendship to an underprivileged community at our very doors.

Inquiries concerning terms of government service are welcomed at the Indonesion Embassy, Canberra. Other spheres are also open—e.g., the church of East Java is appealing for four doctors with positive Christian convictions, and information may be obtained from the undersigned.

In these days, when doctors may feel it is impossible to practise without full modern facilities, it may be a hard challenge. But if met, it will prove a sound investment both on the personal as well as the national level.

Yours, etc.,

Soe, Timor, Indonesia.
January 20, 1959.

PETER J. GRAHAM.

SHORT COURSES IN ANÆSTHETICS.

SIR: May I reply to the letter of Dr. Rex Gray regarding short courses in anæsthetics (January 31, 1959)?

These courses are of great assistance to the following practitioners: (i) Those who learnt their anæsthesia before "Pentothal", relaxants and closed circuit machines were available to them. (ii) Those who were unable to do a residency at a large hospital, or if they did so, were given no organized tuition in anæsthesia. (iii) Those who have been away from anæsthesia for several years (e.g., research, study for higher degrees, etc.), and now wish to turn to general practice.

All these people would continue to give anæsthetics (relaxants included) whether they attend a course or not. Is it not preferable for them to be told at first hand of the difficulties and dangers ahead, than to find them by experience? It seems to me that there is less danger in a partially trained anæsthetist giving a relaxant anæsthetic, than a partially trained surgeon removing a ruptured ectopic pregnancy or a partially trained physician treating a diabetic coma or a partially trained obstetrician dealing with a breech delivery.

I admit that the courses are short, but that is not the fault of the organizers. The correct procedure is to extend the courses, not to abolish them. I wish that similar courses in many phases of medicine and surgery could be arranged.

Yours, etc.,

37 Auburn Street, Moree,
February 4, 1959.

J. F. GALL.

INFORMATION REQUIRED.

SIR: I would be grateful if anyone could give me any information concerning the use of "Psoralen" or "Meladinine" tablets or applications for use in vitiligo in a diabetic patient aged 30 to 40 years.

Yours, etc.,

150 High Street, Wauchope, N.S.W.
February 2, 1959.

E. M. THOMAS.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes etc. are published in the *Commonwealth of Australia Gazette*, No. 6, of January 22, 1959.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Fixing Rates of Pay.—Surgeon Lieutenant-Commander John Roger McNeill is to be paid the rates of pay and allowances prescribed for Surgeon Commander whilst acting in that rank, dated 18th September, 1958.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Appointments.—Surgeon Lieutenant Andrew Keith Frazer, Royal Naval Volunteer Reserve, is appointed Surgeon Lieutenant, with seniority in rank of 23rd April, 1952, dated 1st August, 1958. Robert Malcolm Cook is appointed Surgeon Lieutenant (D.), dated 3rd September, 1958.

District Naval Medical Officer.—Surgeon Lieutenant Andrew Keith Frazer is appointed District Naval Medical Officer, Western Australia, dated 1st August, 1958.

Royal Australian Naval Volunteer Reserve.

Termination of Appointments.—The appointments of the following are terminated to date 31st March, 1958: Surgeon Lieutenant-Commanders Peter Dudley Blaxland and Jack Ramsay Collie.

ROYAL AUSTRALIAN AIR FORCE.

Air Force Reserve.

Medical Branch.

The provisional appointment of Pilot Officer J. P. O'Collins (036629) is confirmed and he is promoted to the rank of Flight Lieutenant, 1st July, 1958.

The following Flight Lieutenants (temporary Wing Commanders) are promoted to the temporary rank of Group Captain, 1st July, 1957: S. F. Reid, O.B.E. (033451), D. H. Le Messurier (282721).

The following Flight Lieutenants (temporary Squadron Leaders) are promoted to the temporary rank of Wing Commander, 1st July, 1957: D. P. Sapsford (271742), P. C. Tresise (053655), J. A. Conquest (267263), B. T. Glanville-Hicks (257775), B. E. Frecker (267894), K. B. Brown (053069), W. J. Betts (287464).

Flight Lieutenant J. B. Curtis (257233) is promoted to the temporary rank of Squadron Leader, 1st July, 1957.

Flight Lieutenant L. E. McDonnell (267717) is granted the acting rank of Squadron Leader, 1st July, 1957.

Post-Graduate Work.

THE MELBOURNE MEDICAL POST-GRADUATE COMMITTEE.

PROGRAMME FOR MARCH, 1959.

Basic Courses at the University for Higher Qualifications.

THE following courses will commence on the dates indicated.

A course in pathology for M.D. Part I and Part II of M.S., M.G.O. and the diplomas will begin on March 2 at 1.30 p.m., continuing on Mondays and Wednesdays till late June. There will be practical classes followed by lectures. The fee is £21.

A course in physiology for M.D., M.S., F.R.A.C.S., F.F.A.R.A.C.S., D.A., M.G.O., D.O., D.L.O., D.D.R. and D.P.M. will begin on March 2 at 3.45 p.m. This will continue on Mondays and Wednesdays till August. Specialist lectures will be given at mutually suitable times, to be arranged. A special course in physiology for D.O.I. commences on March 16 at 5 p.m. The fee for Part I of the physiology course is £21.

A course in physics for D.D.R. and D.C.R.A. in Radiodiagnosis will begin on March 5 at 4.30 p.m. There will be 18 two-hour sessions on Thursdays. The fee is £21.

A course in physics for D.T.R. and D.C.R.A. in Radiotherapy will be arranged when sufficient candidates present.

The course in anatomy, which commenced in February, will continue till August, also on Mondays and Wednesdays. The fee is £21.

A course in microbiology for M.D. Part I and Part II of M.S., M.G.O. and the diplomas will be conducted on Tuesdays at 2.15 p.m., commencing on April 7. The fee is £10 10s.

Enrolments, on the Committee's forms, accompanied by the fees payable, should be sent without delay to the Secretary of the Post-Graduate Committee.

Country Courses.

Mooroopna.—On March 14, at Mooroopna, the following course will be held: 2.30 p.m., "Jaundice and Late Sequelæ", Dr. Ian Wood; 4.30 p.m., "Recurrent Inguinal Hernia", Mr. R. S. Lawson. Dr. B. R. Schloeffel, Shepparton (telephone 9014), is the local secretary. Attendance at this course is by annual subscription to the Post-Graduate Committee, or else by a fee of 15s. per lecture.

Flinders Naval Depot.

On March 18, at Flinders Naval Depot, at 2.30 p.m., Dr. R. Doig will discuss "Headache". This lecture is to be given by arrangement with the Royal Australian Navy.

Psychiatry Courses.

The Australasian Association of Psychiatrists will conduct a course in psychiatry suitable for candidates for D.P.M. and other interested medical graduates. This will commence on Thursday, March 19, at 8.15 p.m., in the Small Lecture Theatre, Royal Melbourne Hospital. There will be 24 lectures on Thursday evenings till August 27. The fee is £2 2s., and enrolments should be made through the Melbourne Medical Post-Graduate Committee. The Association will also arrange instruction in psychotherapy. Further information can be obtained from Dr. W. S. Rickards, Honorary Secretary of the Victorian State Branch of the Association, c.o. Royal Children's Hospital, Carlton.

The Mental Hygiene Authority will conduct a course of lectures and discussions in psychiatry on Tuesdays evenings for a period of six months, commencing in mid-March. This course will be without fee, and is open to all medical practitioners. Inquiries should be addressed to the Chief Clinical Officer, Mental Health Research Institute, Receiving House, Royal Park.

Overseas Lecturers.

Professor W. M. Mushin, Professor of Anæsthetics, Welsh National School of Medicine, Cardiff, will be in Melbourne from March 4 to 10 at the invitation of the Australian Society of Anæsthetists. At 8.15 p.m. on Thursday, March 5, in the Medical Society Hall, he will give, for the general body of the profession, a lecture entitled "At the Spearhead in Anæsthesia". Attendance is without fee.

ANNUAL SUBSCRIPTION COURSE.

The Committee's annual subscription course, which began with the lecture by Professor Alan Johnstone, will continue with the visits of the following: Professor Sir Stanley Davidson, physician, of Edinburgh, who will lecture on April 6; Dr. A. Rae Gilchrist, cardiologist, of Edinburgh, who will lecture on May 22; Sir Horace Smirk, Professor of Medicine, Otago, known for his work in hypertension, who will lecture in May; Dr. Robert Kark, Professor of Medicine, University of Illinois, Chicago, who will visit here as the Pfizer Lecturer in June or July (he is well known for his work in renal and hepatic diseases and steroid therapy); Dr. R. F. Farquharson, Professor of Medicine in the University of Toronto, who will be here for two weeks in June, July or August.

It is expected that the following visitors will also be included: Professor James Dauphinee, chemical pathologist, also of Toronto, about July or August; Dr. L. T. Hilliard, psychiatrist, of the Fountain Hospital, London, in late April or May; Dr. John Conley, head and neck cancer surgeon, from the Pack Medical Centre, U.S.A.; Mr. H. Osmond-Clark, orthopædic surgeon at the London Hospital, from October 8 to 12; Professor Jethro Gough, Professor of Pathology, Welsh National School of Medicine, in late November.

DATES TO BE NOTED.

Attention is drawn to the following dates: March 2, D.C.R.A. examinations begin; March 5, primary F.R.A.C.S. and F.F.A.R.A.C.S. examinations; March 9, Part II examinations begin for M.D., M.S., M.G.O. and post-graduate diplomas; March 13, entries close for M.R.A.C.P. examination; March 19, entries close for final F.R.A.C.S. and F.F.A.R.A.C.S.

LECTURE BY DR. AUSTIN DOYLE.

On March 17, at 5.15 p.m., at the Royal Australasian College of Surgeons, a lecture on "The Advancing Front of Medicine" will be given by Dr. Austin Doyle for The Royal Australasian College of Physicians.

INFORMATION.

The address of the Melbourne Medical Post-Graduate Committee is 354 Albert Street, East Melbourne, C.2. Telephone: FB 2547.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Week-End Course in Respiratory Diseases.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that a week-end course in respiratory diseases will be held at the Royal Prince Alfred Hospital, Sydney, from Friday, April 10, to Sunday, April 12, 1959, under the supervision of Dr. H. Maynard Rennie. Sir Geoffrey Todd, K.C.V.O., O.B.E., F.R.C.P., Medical Superintendent, King Edward VII Sanatorium, Midhurst, Sussex, Civilian Consultant for Diseases of the Chest to the R.A.F., and Honorary Consultant for Pulmonary Tuberculosis to the British Army, will be guest lecturer. The programme will be as follows:

Friday, April 10. In the Scot Skirving Lecture Theatre: 1.15 p.m., seminar, "The Management of Pulmonary Tuberculosis", Sir Geoffrey Todd; 2.30 p.m., clinico-pathological conference, Dr. V. J. McGovern. In the Page Chest Pavilion: 4 p.m., clinical rounds, Dr. H. Maynard Rennie.

Saturday, April 11. In the Page Chest Pavilion: 9.30 a.m., "Pitfalls in the Diagnosis of Pulmonary Tuberculosis", Dr. Cotter Harvey. 10 a.m., "Treatment of Pulmonary Tuberculosis": medical, Dr. C. G. Bayliss and Dr. A. G. McManis; surgical, Dr. Ian Monk; prevention, Sir Harry Wunderly. 11.30 a.m., discussion on pulmonary tuberculosis. 12 noon, "Closed Chest Trauma", Dr. A. F. Grant. 2 p.m., "Chronic Bronchitis", Dr. Geoffrey McDonald; "Asthma", Dr. John Sands; "Emphysema": functional pathology, Dr. H. J. H. Colebatch; clinical picture and treatment, Dr. Peter Harvey; "Cor Pulmonale", Dr. J. G. Richards. 3.30 p.m., "The Silent Solitary Lesion", Dr. Rowan Nicks. 4.30 p.m., "Bronchiectasis: Diagnosis and Treatment", Dr. J. M. Alexander.

Sunday, April 12. In the Page Chest Pavilion: 9.30 a.m., "Modes of Presentation of Lung Cancer", Dr. Maurice Joseph. 10 a.m., "Radiotherapy and Chemotherapy in Treatment of Malignant Disease of the Thorax", Dr. P. M. Corlette and members of the radiotherapy department, Royal Prince Alfred Hospital. 11 a.m., panel discussion and quiz session (chairman, Dr. Cotter Harvey; panel, Sir Geoffrey Todd, Dr. B. P. Anderson Stuart, Dr. Ian Monk, Dr. Rowan Nicks and Dr. H. Maynard Rennie).

The fee for attendance on this course is £3 3s., and those wishing to attend are requested to enrol with the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 4497-8. Telegraphic address: "Postgrad Sydney."

Notes and News.

Lectures in the United States of America Sponsored by E. R. Squibb and Sons.

Professor J. C. Eccles, of the John Curtin School of Medical Research, Australian National University, Canberra, is to deliver a series of lectures on "Problems of Organization and Plasticity at the Simplest Levels of the Mammalian Nervous System" at a number of universities in the U.S.A. from February 23 to March 11, 1959. Professor Eccles is one of a group of physicians from all parts of the world who have been invited by E. R. Squibb and Sons to lecture before medical schools, to mark the beginning of the pharmaceutical company's second century of operation.

University of Edinburgh, Faculty of Medicine: Research Fellowship.

The Sir David Wilkie Research Fellowship in Surgery and/or Medicine, of the value of £800 to £900 (sterling) *per annum*, with a possible allowance for approved expenses of research, and tenable for two years (with possible extension to three years at the discretion of the Senatus Academicus), will be open for award in October, 1959. The fellowship is open to graduates of any university. The holder will be required to carry out approved research work in surgery and/or medicine in the University, and he must attend the honours class in physiology, unless he is already a graduate in physiology or in science. While undertaking the research work, he will be expected to maintain contact with clinical work, but the time to be devoted to this will be restricted to two half-days per week. During his tenure the Fellow will not be permitted to study for or to present himself for any examination leading to a higher diploma in medicine or surgery.

Applications must be submitted on a prescribed form, a copy of which may be obtained from the Dean of the Faculty of Medicine, or from the undermentioned persons. Applications from graduates in the United Kingdom or countries other than Australia, Canada, New Zealand and South Africa, should reach the Dean of the Faculty of Medicine, University New Buildings, Edinburgh, 8, Scotland, by April 1, 1959. Applications from graduates in Australia, Canada, New Zealand and South Africa should reach one of the undermentioned persons by March 1, 1959. Australia: The Chairman, National Health and Medical Research Council, Department of Health, Canberra, A.C.T., Australia. Canada: The Awards Officer, National Research Council, Ottawa, Ontario, Canada. New Zealand: The Secretary, Medical Research Council, Department of Health, P.O. Box 5013, Wellington, New Zealand. South Africa: The Director, The South African Institute for Medical Research, Hospital Street, Johannesburg, South Africa.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JANUARY 17, 1959.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	..	6(5)	3(1)	1(1)	..	..	..	..	10
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	..	..	..	..	..	..	9	..	9
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	2(2)	..	..	..	..	..	..	2
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	5	19(17)	7(6)	..	1(1)	..	..	1	33
Diphtheria	..	..	..	..	..	..	..	..	..
Dysentery (Bacillary)	..	1(1)	..	..	1(1)	..	..	..	2
Encephalitis	..	2(1)	..	..	..	1	..	..	3
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	62(9)	22(13)	10(1)	42(9)	7	..	2	..	145
Lead Poisoning	..	..	1	..	..	..	..	..	1
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	..	..	..	..	..	..	..
Malaria	..	1(1)	1(1)	..	..	..	..	..	2
Meningococcal Infection	..	1(1)	..	1(1)	..	..	..	..	2
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	1	10(10)	..	..	..	1	..	..	11
Puerperal Fever	1	..	..	..	..	1	..	..	2
Rubella	..	27(20)	..	2(2)	30(28)	1	..	..	60
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	8(3)	18(11)	3(2)	2(2)	..	..	..	..	31
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1	..	..	..	..	..	1
Trachoma	..	..	..	..	2	..	6	..	8
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	7(2)	17(9)	18(11)	3(3)	10(7)	5(1)	1	..	61
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

Meeting of the Air Pollution Control Association.

The next annual meeting of the Air Pollution Control Association will be held on June 22 to 26, 1959, at the Hotel Statler, Los Angeles, California. The meeting will include technical sessions and exhibits. At the technical session, papers covering the control of air pollution will be presented by outstanding authorities. Copies of the papers will be on sale during the meeting. After the meeting, "Proceedings", incorporating copies of all technical papers, will be available for purchase. On display in the exhibit area there will be the latest in equipment designed for the control of air pollution, and experts will be in attendance to demonstrate their products and answer questions.

The address of the Air Pollution Control Association is 4400 Fifth Avenue, Pittsburgh 13, Pa., U.S.A.

Corrigendum.

AUSTRALIAN PÆDIATRIC ASSOCIATION.

DR. KATE CAMPBELL informs us that she has been misreported in the account of the annual meeting of the Australian Pædiatric Association. The relevant part of the report occurs in the issue of January 31, 1959, at page 165, under the heading "Bilateral Congenital Choanal Atresia in the Newborn". Dr. Campbell's comments should read as follows:

> K. CAMPBELL (Melbourne) said that she had seen three patients with choanal atresia, two of whom survived. She had found that an unfolded paper clip covered by a piece of rubber catheter and hooked into the angle of the mouth was a simple means of allowing the baby to breathe.

Medical Appointments.

Dr. M. Zeville has been appointed Medical Officer in the Public Health Department, South Australia.

Dr. L. Potts has been appointed Medical Officer in the Public Health Department, South Australia.

Nominations and Elections.

THE undermentioned have applied for election as members of the South Australian Branch of the British Medical Association (qualifications are M.B., B.S., 1957 (Univ. Adelaide), unless otherwise stated):

Hancock, Jonathan Yeatman, 20 Fourth Avenue, St. Peters.
Goldsworthy, Rodney L., 11A Darling Street, Medindie.
Barlow, Douglas John, 39 Portrush Road, Toorak Gardens.
Hanson, Thomas A. S., 7 Glenroy Avenue, Beaumont.
Casley-Smith, John R., 94 Cambridge Terrace, Malvern.
Huang, Anthony Y. T., 223 Childers Street, North Adelaide.
Clarnette, David L., 33 Kent Street, Hawthorn.
Murrell, Timothy G. C., 100 Young Street, Parkside.
Vyse, Mignon R., 24 George Street, Norwood.
Humble, Dudley S., 320 Payneham Road, Payneham.
Craig, Robert J., 248 Cross Road, Kings Park.
Carter, Rodney F., 48 Prospect Road, Prospect.
Wallace, Malcolm M., 1 Day Avenue, Daw Park.
Orchard, Barbara W., 6 Barrelder Road, Torrens Park.
Leonard, Ian F., 129 Sixth Avenue, Joslin.
Hamilton, David W., 33 Marine Parade, Seacliff.
Morris, Neville J., 27 Edmund Terrace, Murray Bridge.
Hall, Donald R., 10 Foundry Street, Goodwood.
Cooper, Christopher J., 59 Kensington Road, Norwood.
Forgan, Peter J., 18 Gawler Terrace, Walkerville.
Hamra, Lawrence K., 72 Godfrey Terrace, Erindale.
Moore, John L., M.B., B.S., 1956 (Univ. Adelaide), 4 Woodville Road, Woodville.
Stewart, Geoffrey D., M.B., B.S., 1956 (Univ. Adelaide), 22 Osmond Avenue, Fullarton East.
Guerin, Robert L., M.B., B.S., 1956 (Univ. Adelaide), 4 Winchester Street, St. Peters.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association: Litt, John Derek, M.B., Ch.B., 1949 (Univ. Edinburgh); Moten, Kathleen M., M.B., B.S., 1957 (Univ. Adelaide).

Deaths.

THE following death has been announced:

YEATMAN.—Charleton Yeatman, on February 4, 1959, at Adelaide.

Diary for the Month.

FEB. 24.—New South Wales Branch, B.M.A.: Hospitals Committee.
FEB. 25.—Victorian Branch, B.M.A.: Branch Council.
FEB. 26.—South Australian Branch, B.M.A.: Scientific Meeting.
FEB. 27.—Queensland Branch, B.M.A.: Council Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculosis Association of New South Wales.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations, other than those normally used by the Journal, and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those of the list known as "World Medical Periodicals" (published by the World Medical Association). If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this Journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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